SONY

TRINITRON® COLOR VIDEO MONITOR

BVM-14G1A/14G1E/14G1U

CHASSIS No. SCC-N52D-A (AUS)/J32H-A (AEP)/H99J-A (U/C)

BVM-14G5A/14G5E/14G5U

CHASSIS No. SCC-N52E-A (AUS)/J32J-A (AEP)/H99K-A (U/C)

BVM-20G1A/20G1E/20G1U

CHASSIS No. SCC-N52C-A (AUS)/J32G-A (AEP)/H99H-A (U/C)

MONITOR CONTROL UNIT

BKM-10R

Trinitron

OPERATION AND MAINTENANCE MANUAL English

1st Edition

Serial No. 2000001 and Higher

⚠ WARNING

This manual is intended for qualified service personnel only.

To reduce the risk of electric shock, fire or injuly, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so. Refer all servicing to qualified service personnel.

WARNING!!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.
THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

ATTENTION!!

AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHÁSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE. LE CHÁSSIS DE CE RÉCEPTEUR EST DIRECTEMENT RACCORDÉ Á L'ALIMENTATION SECTEUR.

ATTENTION AUX COMPOSANTS RELATIFS ÁLA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET PAR UNE MAPQUE ! SUR LES SCHÉMAS DE PRINCIPE, LES VUES EXPLOSÉES ET LES LISTES DE PIECES CONT D'UNE IMPORTANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÉCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY. LES RÉGLAGES DE CIRCUIT DONT L'IMPORTANCE EST CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT SONT IDENTIFIES DANS LE PRÉSENT MANUEL. SUIVRE CES PROCÉDURES LORS DE CHAQUE REMPLACEMENT DE COMPOSANTS CRITIQUES, OU LORSQU'UN MAUVAIS FONCTIONNEMENT EST SUSPECTÉ.

SAFETY CHECK-OUT

(US Model only)

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.

2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.

3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.

4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair Point them out to the customer and recommend their replacement.

5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.

6. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.

7. Check the condition of the monopole antenna (if any). Make sure the end is not broken off, and has the plastic cap on it. Point out the danger of impalement on a broken antenna to the customer, and recommend the antenna's replacement.

8. Check the B+ and HV to see they are at the values specified. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.

9. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.

2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.

3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

HOW TO FIND A GOOD EARTH GROUND

A cold-water pipe is guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth-ground, verify that it is at ground by measuring the resistance between it and a coldwater pipe with an ohmmeter. The reading should be zero ohms. If a cold-water pipe is not accessible, connect a 60-100 watts trouble light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side of the line, the lamp should light at normal brilliance if the screw is at ground potential. (See Fig. B)

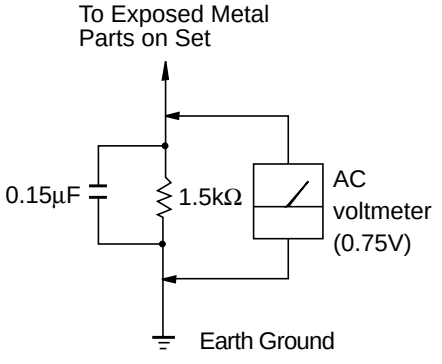

Fig. A. Using an AC voltmeter to check AC leakage.

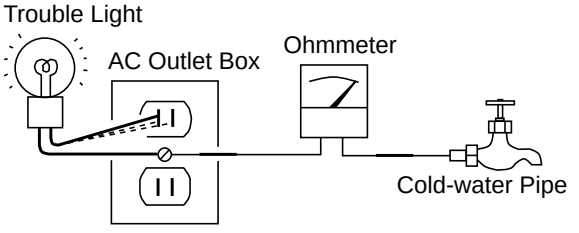

Fig. B. Checking for earth ground.

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SONY

TRINITRON® COLOR VIDEO MONITOR

BVM-20G1U/20G1E/20G1A
BVM-14G1U/14G1E/14G1A
BVM-14G5U/14G5E/14G5A

Trinitron

OPERATION MANUAL English
1st Edition
Serial No. 2000001 and Higher

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

AVERTISSEMENT

Afin d'éviter tout risque d'incendie ou d'électrocution, ne pas exposer cet appareil à la pluie ou à l'humidité.

Afin d'écarter tout risque d'électrocution, garder le coffret fermé. Ne confier l'entretien de l'appareil qu'à un personnel qualifié.

WARNUNG

Um Feuergefahr und die Gefahr eines elektrischen Schlages zu vermeiden, darf das Gerät weder Regen noch Feuchtigkeit ausgesetzt werden.

Um einen elektrischen Schlag zu vermeiden, darf das Gehäuse nicht geöffnet werden. Überlassen Sie Wartungsarbeiten stets nur einem Fachmann.

ADVERTENCIA

Para evitar incendios o el riesgo de electrocución, no exponga la unidad a la lluvia ni a la humedad.

Para evitar descargas eléctricas, no abra la unidad. En caso de avería, solicite los servicios de personal cualificado.

ATTENZIONE

Per evitare incendi o cortocircuiti, l'apparecchio non deve essere esposto alla pioggia o all'umidità.

Per evitare scosse elettriche, non aprite l'apparecchio. Per le riparazioni rivolgetevi solo a personale qualificato.

CAUTION:
Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturer's instructions.

ATTENTION
Il y a un risque d'explosion si la pile est mal insérée. Remplacer la pile uniquement par une pile de même type ou de type équivalent recommandé par le fabricant. Jeter les piles usées conformément aux instructions du fabricant.

VORSICHT:
Es besteht Explosionsgefahr, wenn die Batterie inkorrekt eingelegt wird.
Es darf nur eine identische oder eine vom Hersteller empfohlene Batterie des gleichen Typs eingesetzt werden. Entladene Batterien sind nach den Anweisungen des Herstellers zu entsorgen.

PRECAUCION
Peligro de explosión en caso de haberse instalado incorrectamente la betería.
Cambie sólo por una del mismo tipo o especificaciones equivalentes, de entre las recomendadas por el fabricante. Las baterías viejas se deben eliminar siguiendo las instrucciones del fabricante.

ATTENZIONE:
Pericolo di esplosione se la pila viene sostituita scorrettamente.
Sostituirla solo con un'altra uguale o di un tipo equivalente consigliato dal fabbricante. Gettare via le pile usate secondo le istruzioni del fabbricante.

Note
The socket-outlet should be installed near the equipment and be easily accessible.

Remarque
La prise doit être près de l'appareil et facile d'accès.

Hinweis
Zur Trennung vom Netz ist der Netzstecker aus der Steckdose zu ziehen, welche sich in der Nähe des Gerätes befinden muß und leicht zugänglich sein soll.

Nota
La toma mural debe estar instalada cerca del equipo y debe accederse a ésta con facilidad.

Nota
La presa di corrente deve essere situata vicino all'apparecchio e deve essere facilmente accessibile.

SECTION 1
OPERATING INSTRUCTIONS

This section is extracted from operation manual.

WARNING: THIS WARNING IS APPLICABLE FOR USA ONLY.

If used in USA, use the UL LISTED power cord specified below.
DO NOT USE ANY OTHER POWER CORD.

Plug Cap	Parallel blade with ground pin (NEMA 5-15P Configuration)
Cord	Type SVT, three 16 or 18 AWG wires
Length	Less than 2.5 m (8 ft 3 in)
Rating	Minimum 10 A, 125 V

Using this unit at a voltage other than 120V may require the use of a different line cord or attachment plug, or both. To reduce the risk of fire or electric shock, refer servicing to qualified service personnel.

For customers in the USA
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

For customers in Canada
This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Pour les utilisateurs au Canada
Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Für Kunden in Deutschland
Dieses Produkt kann im kommerziellen und in begrenztem Maße auch im industriellen Bereich eingesetzt werden. Dies ist eine Einrichtung, welche die Funk-Entstörung nach Klasse B besitzt.

Voor de klanten in Nederland

Bij dit produkt zijn batterijen geleverd. Wanneer deze leeg zijn, moet u ze niet weggooien maar inleveren als KCA.

- Dit apparaat bevat een Li-ion batterij voor memory back-up.
- De batterij voor memory back-up is vastgesoldeerd op de BC printplaat BAT1.
- Raadpleeg uw leverancier over de verwijdering van de batterij op het moment dat u het apparaat bij einde levensduur afdankt.
- Gooi de batterij niet weg, maar lever hem in als KCA.

Note
Be sure to use the supplied power cord for this monitor, or this monitor may not conform with the FCC Rules or EEC Directive 89/336/EEC.

Remarque
Utiliser le cordon d'alimentation fourni pour ce moniteur, sinon il pourrait ne pas être conforme aux règles FCC ou à la directive CEE 89/336/EEC.

Hinweis
Dieser Monitor darf ausschließlich mit dem mitgelieferten Netzkabel betrieben werden, weil anderenfalls der Monitor nicht mehr die FCC-Vorschriften oder die EG-Richtlinie 89/336/EWG erfüllt.

Nota
Utilice sin falta el cable eléctrico que viene con este monitor; de lo contrario el monitor puede no cumplir con los reglamentos de la FCC o de la directiva 89/336/EEC de la Comunidad Europea.

Nota
Assicurarsi di usare il cavo di alimentazione in dotazione per questo monitor, altrimenti il monitor può non essere conforme alle norme FCC o alla Direttiva CEE/89/336.

ATTENTION - When the product is installed in a rack:

a) Elevated operating ambient temperature
If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacture's maximum rated ambient temperature (Tmra: 0°C to 35°C (32°F to 95°F)).

b) Reduced air flow
Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

c) Mechanical loading
Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

d) Circuit overloading
Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of circuits might have on overcurrent protection and supply wiring.
Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

e) Reliable earthing
Reliable earthing of rack-mounted equipment should e maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g., use of power strips).

f) Gap keeping
Upper and lower gap of rack-mounted equipment should be kept 44 mm (1¾ inches).

For the customers in the United Kingdom

WARNING
THIS APPARATUS MUST BE EARTHED

IMPORTANT
The wires in this mains lead are coloured in accordance with the following code:

Green-and-yellow:	Earth
Blue:	Neutral
Brown:	Live

As the colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows:
The wire which is coloured green-and-yellow must be connected to the terminal in the plug which is marked by the letter E or by the safety earth symbol ⏚ or coloured green or green-and-yellow.
The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.
The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

Ensure that your equipment is connected correctly - if you are in any doubt consult a qualified electrician.

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Precaution

On safety

- Operate the unit only with a power source as specified in “Specifications” section.
- The nameplate indicating operating voltage, power consumption, etc., is located at the rear.
- Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- Do not drop or place heavy objects on the power cord. If the power cord is damaged, turn off the power immediately. It is dangerous to use the unit with a damaged power cord.
- Unplug the unit from the wall outlet if it is not to be used for several days or more.
- Disconnect the power cord from the AC outlet by grasping the plug, not by pulling the cord.
- The socket-outlet shall be installed near the equipment and shall be easily accessible.

On installation

- Allow adequate air circulation to prevent internal heat build-up.
  Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.
- Do not install the unit in a location near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.

On cleaning

To keep the unit looking brand-new, periodically clean it with a mild detergent solution. Never use strong solvents such as thinner or benzine, or abrasive cleansers since they will damage the cabinet. As a safety precaution, unplug the unit before cleaning it.

On repacking

Do not throw away the carton and packing materials. They make an ideal container which to transport the unit. When shipping the unit to another location, repack it as illustrated on the carton.

If you have any questions about this unit, contact your authorized Sony dealer.

On magnetism

- Do not place the unit near any objects or pieces of equipment which generate magnetism, such as magnets, speakers, electric clocks, toys using magnets, health appliances, etc. Magnetism will cause picture bounce, oscillations or picture discoloration.
- Also, the picture may become fuzzy or the colors may not reproduce correctly due to earth magnetism. This depends on direction that the unit is installed. This is not equipment failure. In such a case, simply degauss the unit.

On the CRT

- Dust accumulates on the CRT easily. Clean the CRT when necessary with a soft cloth.
  The surface of the CRT is easily scratched; therefore, do not rub or touch the surface of the CRT unnecessarily since this may result in a scratched picture tube.
- If you touch the surface of the CRT, you may feel a weak electrical shock. This is simply static electricity that is generated on the surface of the CRT. It will not affect the human body.

Chapter 1 Overview

Overview

The BVM-20G1U/20G1E/20G1A are 20 -inch Trinitoron®1) Color Monitors. The BVM-14G1U/14G1E/14G1A/14G5U/14G5E/14G5A are 14-inch Trinitoron® Color Monitors. They are suitable for television stations or video production houses, where precise image reproduction is required.

Features

High resolution picture tube

The HR Trinitron picture tube produces a clear, high resolution image.

Model	Aperture grille pitch	Resolution at the center of the picture
BV-20G1U/20G1E/ 20G1A	0.3 mm	800 TV lines
BV-14G1U/14G1E/ 14G1A/14G5U/ 14G5E/14G5A	0.25 mm	800 TV lines

Separate control unit (BVM-20G1U/20G1E/ 20G1A/14G1U/14G1E/14G1A only)

The BVM-20G1U/20G1E/20G1A/14G1U/14G1E/ 14G1A are controlled by a separate control unit, such as an optional BKM-10R/11R Monitor Control unit. Using a separate control unit reduces the space needed for the equipment. The BVM-20G1U/20G1E/20G1A can be connected to the BKM-10R via an optional BKM-32H Monitor Control Unit Attachment Kit.

Controlling monitor groups

Up to 32 monitors can be controlled from this monitor. First, using the monitor menus, assign a monitor address number to each monitor, divide the monitors into groups, and assign a group number to each group. Then you can use this monitor to control individual monitors or monitor groups simply by entering monitor address or group numbers. You can also execute the same operation on all connected monitors, or use this monitor to put all connected monitors into the same setup and adjustment state.

Setup and adjustment with the Monitor Memory Card

You can use an optional BKM-12Y Monitor Memory Card to save and load monitor setup and adjustment data. If your system includes more than one monitor, you can use the monitor memory cards to exchange data between monitors. This makes it easy to put all monitors in your system into the same setup and adjustment state.

Standard auto alignment system

Decoder chroma and phase adjustment, as well as color temperature control, may be performed with the auto alignment system. This makes it possible to coordinate settings among multiple monitors.

Expandable input capability

The input connector configuration may be easily modified by simply sliding optional decoder adaptor or the input expansion adaptor into input option slot at the rear of the monitor.

4:3/16:9 dual aspect ratio design

This monitor can be changed to either 4:3 or 16:9 aspect ratio with just a simple switching operation. The screen can be also changed to 4:3 or 16:9 display by the replacement of a mask (no tools required).

Stable color temperature

The internal beam current feedback circuit maintains a constant color temperature over long periods of time.

Blue-only mode convenient for monitoring noise

All three CRT cathodes can be driven with a blue signal, producing a monochrome display. This mode is convenient for chroma and phase adjustment, and for monitoring VTR noise.

Menu operation

The monitor’s various functions and operating conditions can be set with on-screen menus.

1) Trinitron® is a registered trademark of Sony Corporation.

Other features

- Compatible with the ISR (Interactive Status Reporting) system.
- Has both RS-485 serial remote and relay contact parallel remote control connectors.
- Built-in safe area display and test signal generator for crosshatch, 100% white signal, 20% gray signal, gray scale, and PLUGE (Picture Line Up Generating Equipment).
- Built-in Caption Vision decoder.
- Pulse cross function for simultaneous checking of the horizontal and vertical synchronization signals. VITS (Vertical Interval Test Signal) checking is also possible.
- Auto and manual degaussing.
- Built-in CRT protection circuit.
- This monitor may be mounted in an EIA-standard 19-inch rack, using an optional BKM-30E20/30E14/31E14 Rack Mount Kit.
- Controllable from the optional BKM-10R/11R Monitor Control Unit. (For details about connection and operation, refer to the BKM-10R/11R Operation Manual).

Options

For external control

BKM-10R/11R Monitor Control Unit
A controller for this monitor and other BVM-series video monitors, allowing you to control multiple monitors from one control unit.

BKM-12Y Monitor Memory Card
Memory cards which can be read and written by the BVM-14G5U/14G5E/14G5A or BKM-10R/11R.

BKM-14L Auto Setup Probe
This probe allows automatic adjustment of this monitor's color temperature.

For screen

BKM-33H20 Monitor 16:9 Mask
Adapts the BVM-20G1U/20G1E/20G1A screen for 16:9 aspect ratio display.

BKM-33H14 Monitor 16:9 Mask
Adapts the BVM-14G1U/14G1E/14G1A/14G5U/14G5E/14G5A screen for 16:9 aspect ratio display.

For installation

BKM-30E20 Rack Mount Kit
Rack mount kit for mounting the BVM-20G1U/20G1E/20G1A in an EIA standard 19-inch rack.

BKM-30E14 Rack Mount Kit
Rack mount kit for mounting the BVM-14G5U/14G5E/14G5A in an EIA standard 19-inch rack.

BKM-31E14 Rack Mount Kit
Rack mount kit for mounting the BVM-14G1U/14G1E/14G1A in an EIA standard 19-inch rack.

BKM-32H Monitor Control Unit Attachment Kit
Assembly kit for attaching a BKM-10R Monitor Control Unit to the BVM-20G1U/20G1E/20G1A.

Decoder and input expansion adaptors

The input connector panel is configured by sliding optional decoder adaptor or input expansion adaptor into the input option slot at the rear of the monitor.

Note

When installing the adaptor, be sure to perform the necessary input signal setup with the INPUT CONFIGURATION menu. If the setup is not performed, the adaptors may not function correctly.

For information about the INPUT CONFIGURATION menu, see "Setting the Input Configuration (SET UP 1)—INPUT CONFIGURATION Menu" on page 32.

BKM-20D SDI 4:2:2 Decoder Adaptor
Includes decoders for serial digital component signals (525/625). Input/output connectors for three serial digital channels (component inputs only) and three analog channels. The input signal type for each connector is set with the INPUT CONFIGURATION menu, in accordance with the configuration of the connector panel.

BKM-21D SDI Multi Decoder Adaptor
Includes decoders for serial digital signals (525/625 component and NTSC/PAL composite) and analog composite signals (NTSC and PAL). Input/output connectors for three serial digital channels and three analog channels are equipped. The input signal type for each connector is set with the INPUT CONFIGURATION menu, in accordance with the configuration of the connector panel.

BKM-24N NTSC Decoder Adaptor
Includes decoders for analog composite NTSC signals and input/output connectors for six analog channels. The input signal type for each connector is set with the INPUT CONFIGURATION menu, in accordance with the configuration of the connector panel.

BKM-25P PAL Decoder Adaptor
Includes decoders for analog composite PAL signals and input/output connectors for six analog channels. The input signal type for each connector is set with the INPUT CONFIGURATION menu, in accordance with the configuration of the connector panel.

BKM-26M PAL-M Decoder Adaptor
Includes decoders for analog composite PAL-M signals and input/output connectors for six analog channels. The input signal type for each connector is set with the INPUT CONFIGURATION menu, in accordance with the configuration of the connector panel.

BKM-27T Tri-Standard Decoder Adaptor
Includes decoders for analog composite NTSC, PAL, and SECAM signals and input/output connectors for six analog channels. The input signal type for each connector is set with the INPUT CONFIGURATION menu, in accordance with the configuration of the connector panel.

BKM-28X Analog Input Expansion Adaptor
Increases the number of input/output channels. Includes input/output connectors for six analog channels. The input signal type for each connector is set with the INPUT CONFIGURATION menu, in accordance with the configuration of the connector panel.

BKM-48X Analog Input Expansion Adaptor
Increases the number of input/output channels. Includes input/output connectors for six analog channels. For each input output connector, either floating or ground can be selected by the switch inside the board. The input signal type for each connector is set with the INPUT CONFIGURATION menu, in accordance with the configuration of the connector panel.

Connector Panel Configuration

The unit comes standard with connectors for one channel of Y/R–Y/B–Y or RGB. By adding optional decoder adaptor or input expansion adaptors, the input/output connector panel can be assembled in a wide variety of configurations. The signals that each of the adaptors' connectors supports are given in the table below. The type of signal to be applied to each input/output connector is set with the INPUT CONFIGURATION menu.

Notes

The BKM-20D and BKM-21D can not provide proper active-through outputs if a signal whose format is not selected in the INPUT CONFIGURATION menu is input. (If AUTO is selected, input a signal which has the same format with the signal monitored last.)

For information about the INPUT CONFIGURATION menu, see "Setting the Input Configuration (SET UP 1) — INPUT CONFIGURATION Menu" on page 32.

		Adaptor name							
		BKM-20D SDI 4:2:2 Decoder Adaptor	BKM-21D SDI Multi Decoder Adaptor	BKM-24N NTSC Decoder Adaptor	BKM-25P PAL Decoder Adaptor	BKM-26M PAL-M Decoder Adaptor	BKM-27T Tri-Standard Decoder Adaptor	BKM-28X Analog Input Expansion Adaptor	BKM-48X Analog Input * Expansion Adaptor
Serial digital input	Component 525/625	○	○						
	Composite NTSC		○						
	Composite PAL		○						
Analog input	Composite NTSC		○	○			○		
	Composite PAL		○		○		○		
	Composite PAL-M					○			
	Composite SECAM						○		
	Y/R–Y/B–Y 525/625	○	○	○	○	○	○	○	○
	RGB 525/625	○	○	○	○	○	○	○	○
	Y/C NTSC			○			○		
	Y/C PAL				○		○		
	Y/C PAL-M					○			
Number of digital inputs		3	3	–	–	–	–	–	–
Number of analog input		3	3	6	6	6	6	6	6

* : Equipped with floating/non-floating ground mode selector for HAM reduction

Overview

Note on using the BKM-20D/21D

When the input option slot on the rear of the monitor has a BKM-20D/21D SDI Decoder Adaptor (option) installed, if you remove and insert the analog input connectors board, the radiation shield (see Fig. 2) of the BKM-20D/21D may be damaged or detached.

Fig.1

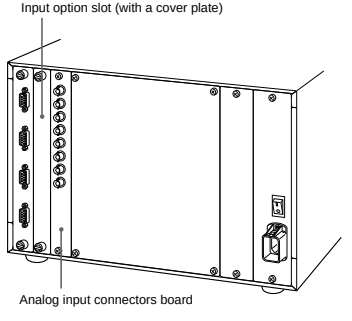
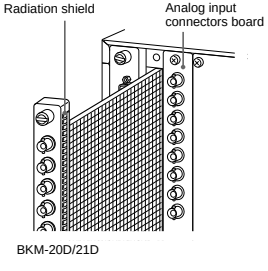


Fig. 2

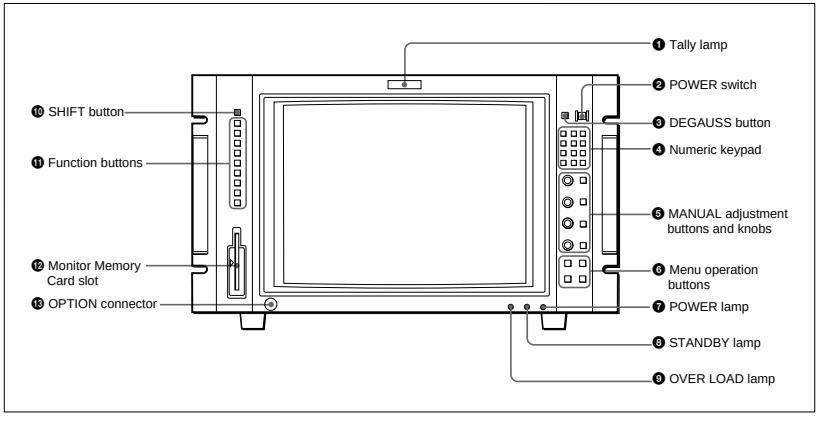


When installing the analog input connectors board again, remove the BKM-20D/21D temporarily while carrying out the other operations, then reinstall it.

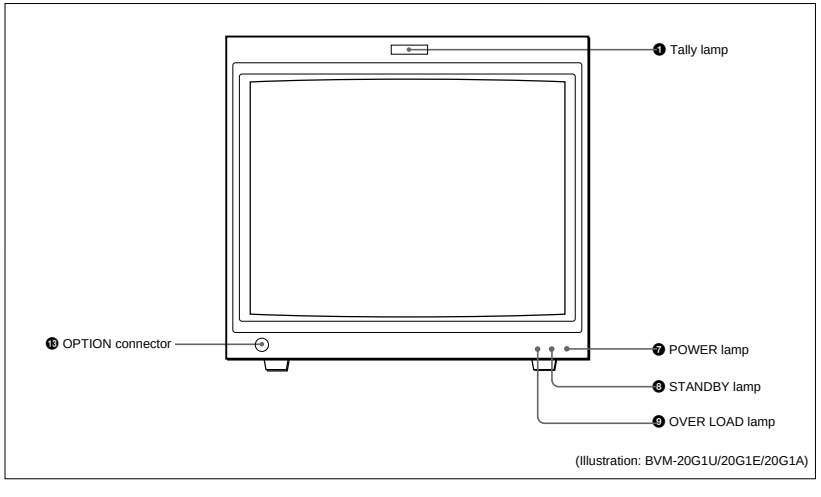
Location and Function of Parts

Front Panel

BVM-14G5U/14G5E/14G5A



BVM-20G1U/20G1E/20G1A/14G1U/14G1E/14G1A



(Illustration: BVM-20G1U/20G1E/20G1A)

This manual explains the location and function of parts and controls using the control panel of the BVM-14G5U/14G5E/14G5A. The explanation applies to BVM-14G1U/14G1E/14G1A/20G1U/20G1E/20G1A with the BKM-10R/11R Monitor Control Unit.

❶ Tally lamp
With factory settings, the Tally lamp lights when pins No. 8 and No. 9 of the REMOTE 2 connector on the rear panel are shorted. By changing the setting in the REMOTE menu, different pins on the remote connector can be used to control the tally lamp.

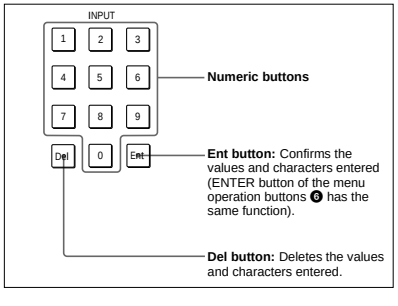
For information about the REMOTE menu, see "Assigning the Remote Control Functions (SET UP 2) —REMOTE Menu" on page 35.

❷ POWER switch
Press to turn on/off the monitor. By setting with the ADDRESS menu, it is possible to turn on/off the power of the specified monitors only, or of all monitors at the same time.

For information about the ADDRESS menu, see "Selecting the Monitor to Control - ADDRESS Menu" on page 49.

❸ DEGAUSS button
Press to degauss the CRT (every time the monitor is turned on, the CRT is degaussed automatically). To degauss again, wait for more than five minutes.

❹ Numeric keypad
Use to designate the channel number for the input signal to be monitored, or to enter the setting values with the menus.



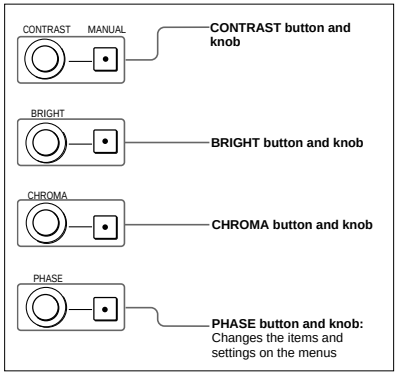
Channel number entry method:
(In the explanation below, x and y represent any digit between 1 and 9.)
When selecting a number from 1 to 9, press the x button to display channel x. When selecting a number from 10 to 99, press the 0, x, and y buttons to display channel xy (a two-digit channel number).

❺ MANUAL adjustment buttons and knobs
Each press of one of these buttons turns the button's green LED on or off. When the corresponding button is on (lit), it is possible to manually adjust the contrast, brightness, chroma and phase by turning the corresponding knobs. They are also used to enter the setting values with the menus. It is possible to set the preset value for each adjusting item with the CONTROL PRESET ADJ menu.

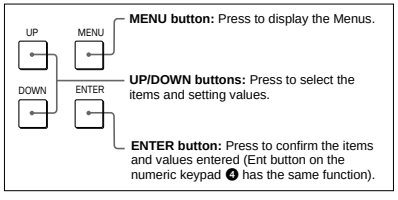
For Information about the CONTROL PRESET ADJ menu, see "Preset Adjustment of the Picture Level Control Knobs - CONTROL PRESET ADJ menu" on page 25.

Notes

When using the composite SECAM, composite PAL D, component or SDI (component or composite serial digital interface) format, note the following.
- The signal phase cannot be adjusted.
- The phase and chroma of RGB signals cannot be adjusted.



❻ Menu operation buttons


UP
MENU
DOWN
ENTER
MENU button: Press to display the Menus.
UP/DOWN buttons: Press to select the items and setting values.
ENTER button: Press to confirm the items and values entered (Ent button on the numeric keypad ❹ has the same function).

For more information about menu operation, see "Basic Menu Operations" on page 22.

❼ POWER lamp

Lights when the monitor is put into operation mode from standby mode (see STANDBY lamp ❽) by pressing the POWER switch ❷.

Note

When the STANDBY lamp ❽ is blinking, the monitor cannot be put into operation mode (internal data initialization is taking place). Wait until the STANDBY lamp ❽ is steadily lit.

❽ STANDBY lamp

Lights when the monitor is in standby mode. The monitor will be in standby mode under the following conditions:

- The MAIN POWER switch (on the rear panel) is turned on (the STANDBY lamp will blink for a few moments after the switch is turned on, then will light).
- The monitor is changed from operation mode to standby mode by external control.

❾ OVER LOAD lamp

Lights to warn of CRT overload.

Location and Function of Parts

❿ SHIFT button

Press to select one of the two functions designated to the function buttons ⓫.

Each time the SHIFT button is pressed, the LED turns on (SHIFT ON: lit in orange) and off (SHIFT OFF: lit in green).

SHIFT OFF: The functions indicated on the left side of the function buttons can be used.

SHIFT ON: The functions indicated on the right side of the function buttons can be used.

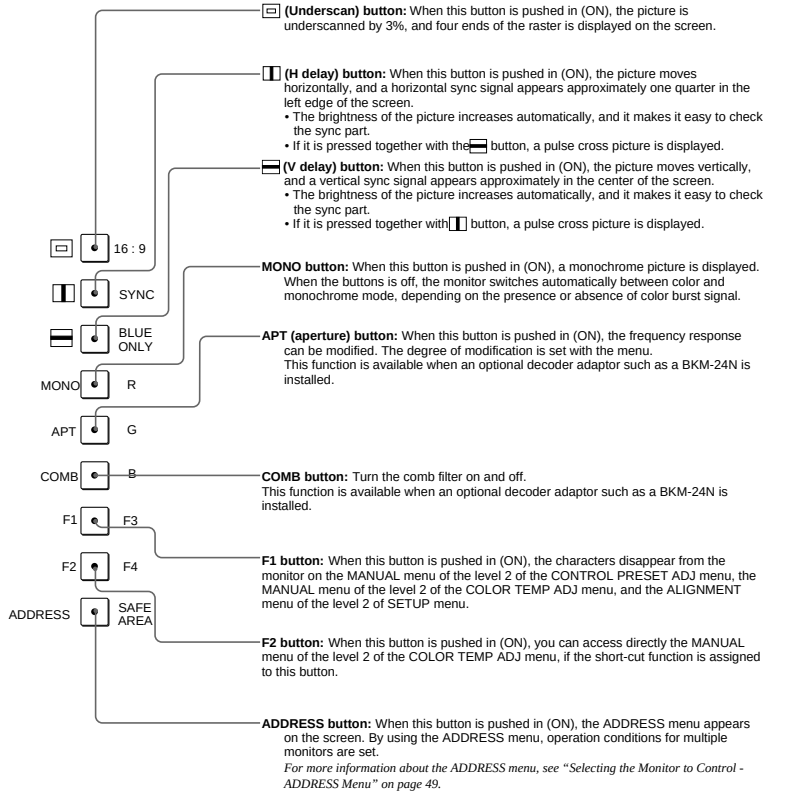
⓫ Function buttons

Change the operation conditions for the monitor.

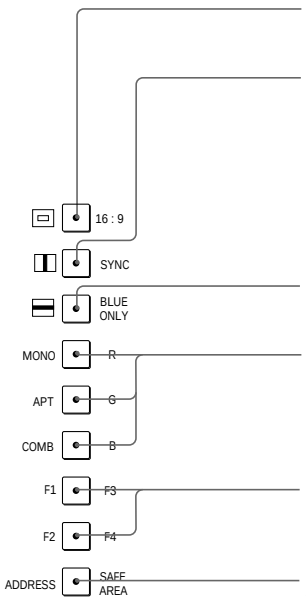
Each time the button is pressed, the LED turns on and turns off, and the operation conditions are changed.

Each button has two functions. Select one of the two functions by pressing the SHIFT button ❿. When the SHIFT button is set to ON, the LED lights in orange, and when the SHIFT button is set to OFF, the LED of each button lights in green.

SHIFT OFF (LEDs of function buttons in green)


(Underscan) button: When this button is pushed in (ON), the picture is underscanned by 3%, and four ends of the raster is displayed on the screen.
(H delay) button: When this button is pushed in (ON), the picture moves horizontally, and a horizontal sync signal appears approximately one quarter in the left edge of the screen.
• The brightness of the picture increases automatically, and it makes it easy to check the sync part.
• If it is pressed together with the button, a pulse cross picture is displayed.
(V delay) button: When this button is pushed in (ON), the picture moves vertically, and a vertical sync signal appears approximately in the center of the screen.
• The brightness of the picture increases automatically, and it makes it easy to check the sync part.
• If it is pressed together with button, a pulse cross picture is displayed.
16 : 9
SYNC
BLUE ONLY
MONO
R
APT
G
COMB
B
F1
F3
F2
F4
ADDRESS
SAFE AREA
MONO button: When this button is pushed in (ON), a monochrome picture is displayed. When the buttons is off, the monitor switches automatically between color and monochrome mode, depending on the presence or absence of color burst signal.
APT (aperture) button: When this button is pushed in (ON), the frequency response can be modified. The degree of modification is set with the menu.
This function is available when an optional decoder adaptor such as a BKM-24N is installed.
COMB button: Turn the comb filter on and off.
This function is available when an optional decoder adaptor such as a BKM-24N is installed.
F1 button: When this button is pushed in (ON), the characters disappear from the monitor on the MANUAL menu of the level 2 of the CONTROL PRESET ADJ menu, the MANUAL menu of the level 2 of the COLOR TEMP ADJ menu, and the ALIGNMENT menu of the level 2 of SETUP menu.
F2 button: When this button is pushed in (ON), you can access directly the MANUAL menu of the level 2 of the COLOR TEMP ADJ menu, if the short-cut function is assigned to this button.
ADDRESS button: When this button is pushed in (ON), the ADDRESS menu appears on the screen. By using the ADDRESS menu, operation conditions for multiple monitors are set.
For more information about the ADDRESS menu, see "Selecting the Monitor to Control - ADDRESS Menu" on page 49.

SHIFT ON (LEDs of function buttons in orange)



16:9 button: When this button is pushed in (ON), the aspect ratio changes to 16:9, and when set to OFF, the aspect ratio changes to 4:3.

SYNC button: When this button is pushed in (ON), the monitor synchronizes to the sync signal input to the SYNC connectors on the rear panel (EXT SYNC). When set to OFF, it synchronizes to the sync signal included in the signals being monitored (INT SYNC).

Notes

- When INT SYNC is selected, use a component or YC signals including a sync signal on the Y signal, and use RGB signal including a sync signal on the G signal.
- To monitor serial digital signals, select INT SYNC.

BLUE ONLY button: When this button is pushed in (ON), red and green signals are cut, and only the blue signal is displayed as a monochrome picture. It makes it easy to adjust CHROMA and to check VTR noise.

R/G/B buttons: When these buttons are pushed in (ON), R(red), G(green), and B(blue) beams are cut respectively.

F3/F4 buttons: For future expansion.

SAFE AREA button: When this button is pushed in (ON), a safe area is displayed on the screen.

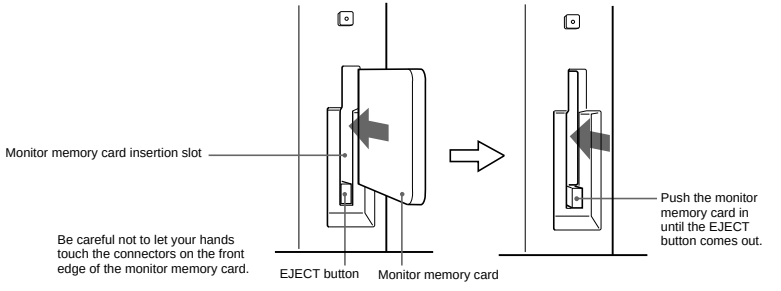
⓬ Monitor Memory Card slot
Insert the BKM-12Y Monitor Memory Card (optional).
For information about operations on monitor memory card data, see "Monitor Memory Card Data Operations — MEMORY CARD menu" on page 46.

Proceed as illustrated to insert and eject the BKM-12Y Monitor Memory Card.

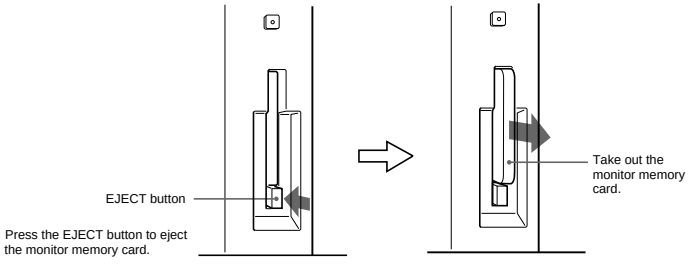
Note

Do not eject the monitor memory card while data is being saved or loaded.

To insert the BKM-12Y Monitor Memory Card


Monitor memory card insertion slot
Be careful not to let your hands touch the connectors on the front edge of the monitor memory card.
EJECT button
Monitor memory card
Push the monitor memory card in until the EJECT button comes out.

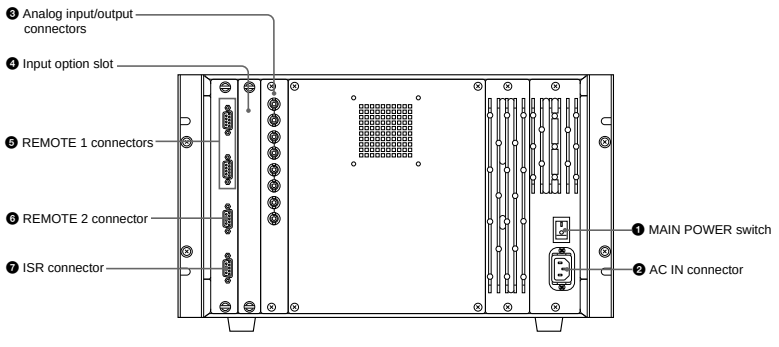
To eject the BKM-12Y Monitor Memory Card



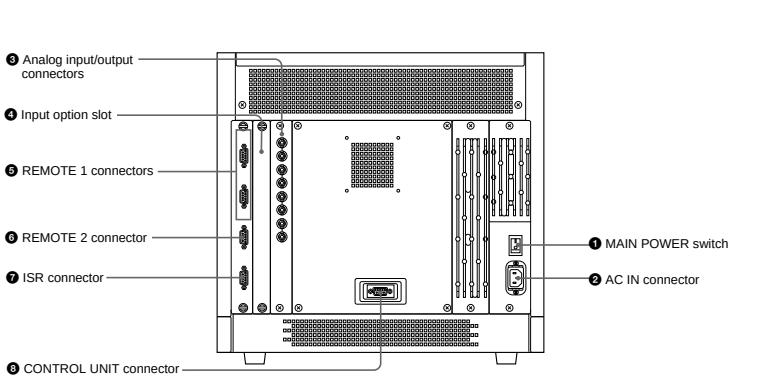
⓭ OPTION connector
Connector for expansion.

Rear Panel

BVM-14G5U/14G5E/14G5A



BVM-20G1U/20G1E/20G1A/14G1U/14G1E/14G1A



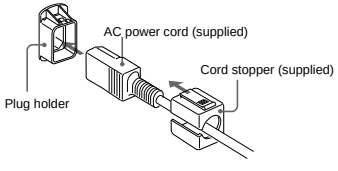
(Illustration: BVM-20G1U/20G1E/20G1A)

Location and Function of Parts

❶ MAIN POWER switch
When turned on, the monitor enters standby mode. By setting in the SYSTEM CONFIGURATION menu, the monitor can also be set to enter operation mode when the MAIN POWER switch is turned on.

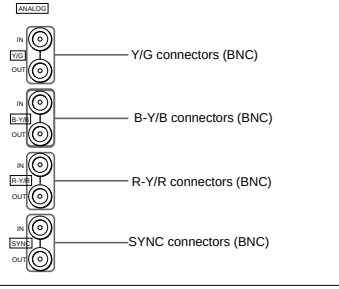
For information about the SYSTEM CONFIGURATION menu, see "Setting Power-Up Conditions and Decoder (SET UP 4) —SYSTEM CONFIGURATION Menu" on page 39.

❷ AC IN connector (3-pin)
Connects the monitor to an AC power source, via the supplied AC power cord.



Attach the cord stopper to the AC power cord, and connect it to the plug holder so that the cord does not come loose.

❸ Analog input/output connectors

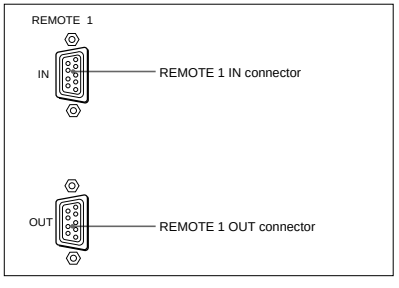


RGB signals, component signals (Y/R-Y/B-Y), or composite sync signals can be fed in the IN connectors. The type of signal applied to each connector is set with the INPUT CONFIGURATION menu. The OUT connectors are used for loop-through output of the input signal. When not using loop-through, connect a 75-ohm terminator (not supplied) to the OUT connectors.

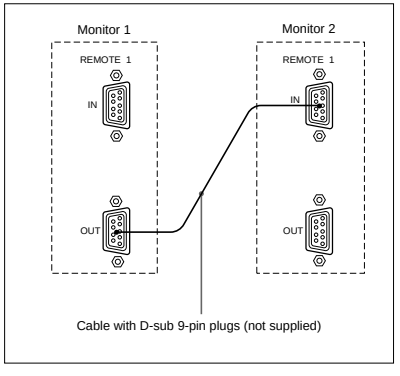
For information about the INPUT CONFIGURATION menu, see "Setting the Input Configuration (SET UP 1)—INPUT CONFIGURATION Menu" on page 32.

❹ Input option slot
One optional decoder adaptor or input expansion adaptor can be installed into this option slot.

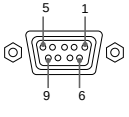
❺ REMOTE 1 connectors (female, D-sub 9-pin)



These are RS-485 serial interface connectors, used for connecting two or more BVM/HDM-series monitors. The IN and OUT connectors form a loop-through connection.
Connect two monitors using a cable with D-sub 9-pin plugs such as an RCC-5G (not supplied) as shown in the figure on the next page.



❻ REMOTE 2 connector (female, D-sub 9-pin)
Forms a pararell switch and controls the monitor externally. The pin assignment and factory setting function assigned to each pin are given below.



Pin number	Function
1	Set input signal channel 1 (numeric keypad function)
2	Set input signal channel 2 (numeric keypad function)
3	Select sync signal (SYNC button function)
4	Set the screen to monochrome, or set for automatic switching based on the input signal (MONO MODE button function)
5	Safe area on/off (SAFE AREA button function)
6, 7	Not connected
8	Tally lamp on/off
9	Ground

All pin function assignments can be changed with the REMOTE menu.

For information about the REMOTE menu, see "Assigning the Remote Control Functions (SET UP 2)—REMOTE Menu" on page 35.

To switch each function between on and off or between enable and disable, change pin connections in the following way.
ON or enabled: Short each pin and pin 9 together.
OFF or disabled: Leave each pin open.

❼ ISR (Interactive Status Reporting) connector (female, D-sub 9-pin)
Connect to the ISR system.

❽ CONTROL UNIT connector (female, D-sub 9-pin)
Connects a monitor control unit such as the BKM-10R using a cable with D-sub 9-pin plugs such as an RCC-5G (not supplied).

Menu Structure

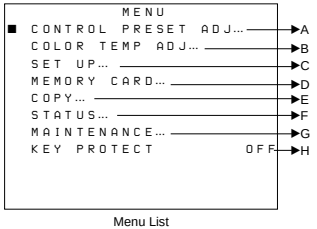
The various functions and operating conditions of the monitor can be set with on-screen menus. Menus consist of multiple levels of sub menus. The overview of the menu tree is described in "Menu Directories" on pages 20 and 21.

Detailed information on the levels of menus is described at the top of explanation of each menu.

Displaying the Menus

Press the MENU button.

The menu list is displayed on the screen.



Menu List

When you select one item on the main menu, the level 1 menu corresponding to the selected item on the main menu appears.
The adjustments and settings which can be made with the menus are described below.

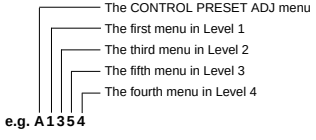
Note

On this monitor, menu settings displayed in blue cannot be changed.

Display of the main menu level		Functions
A	CONTROL PRESET ADJ menu	Sets the preset values for the input signal contrast, brightness, chroma, and phase.
B	COLOR TEMP ADJ menu	Sets the color temperature.
C	SET UP menus	A menu group for performing monitor setup, consisting of the following. • INPUT CONFIGURATION menu: Sets the input channel. • REMOTE menu: Sets the remote control functionality. • PASSWORD menu: Sets passwords for menus. • SYSTEM CONFIGURATION menu: Sets power-up conditions and decoder. • ON SCREEN SET menu: Sets data about the screen display. • ALIGNMENT menu: Used to adjust the screen convergence and geometry. • EXTEND menu: Loads the factory default data for the board installed. Reads and writes setting and adjustment data from/into the memory card.
D	MEMORY CARD menu	Operates on data in the memory card.
E	COPY menu	Copies set-up data from other connected monitors.
F	STATUS menu	Displays the information about the monitor or options installed in the monitor.
G	MAINTENANCE menu	Menu for maintenance (typically not used).
H	KEY PROTECT	When set to ON, function buttons on the control unit (with the exception of menu operation buttons) will be disable. When set to OFF, key protection is removed.

About menu numbers

For purposes of explanation in this manual, each menu is preceded by menu numbers. The alphabet determines the classification of Menus on the Menu list (Main Menu), and the numbers determine the level and the order. These menu numbers are not shown on the screen.


The CONTROL PRESET ADJ menu
The first menu in Level 1
The third menu in Level 2
The fifth menu in Level 3
The fourth menu in Level 4
e.g. A1354

Only the menus which require explanation are preceded by menu numbers. Thus, the menu number is counted without menus which do not require explanation.

ADDRESS Menu

In addition to the menus listed in the table, the ADDRESS menu is used to select the monitor or the monitor group, so that when several monitors are connected together via serial remote ports, the control panel can select which monitor to control.
To display or exit the ADDRESS menu, press the ADDRESS button. The method of choosing menu items and changing settings is the same as with the other menus.

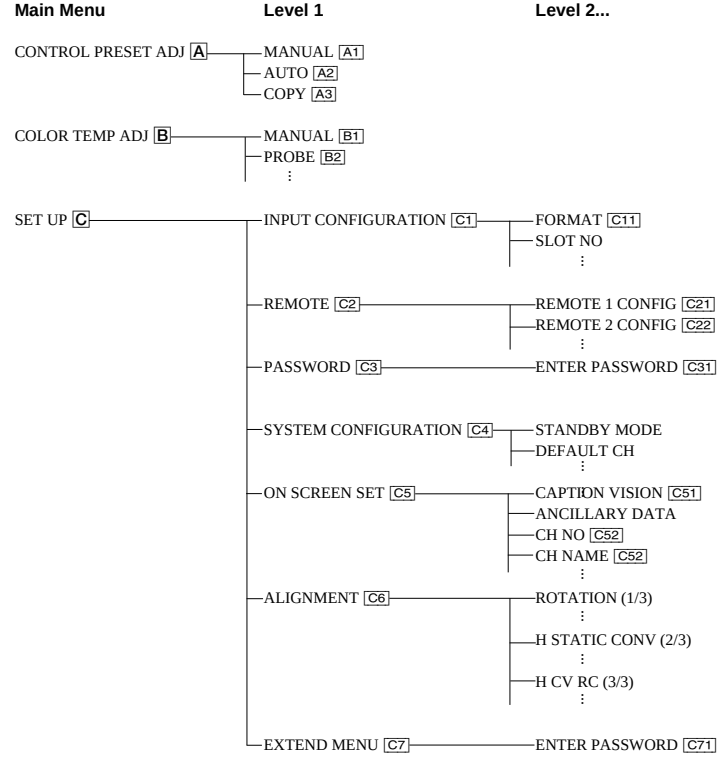
For information about the ADDRESS menu, see "Selecting the Monitor to Control —ADDRESS Menu" on page 49.

Menu Structure

Menu Directories

Menus consist of three to five levels. The Main Menus displayed on the Menu List and Levels 1 and 2 are shown below.

All menus including those in lower levels are shown at the top of the explanation of each Main Menu.

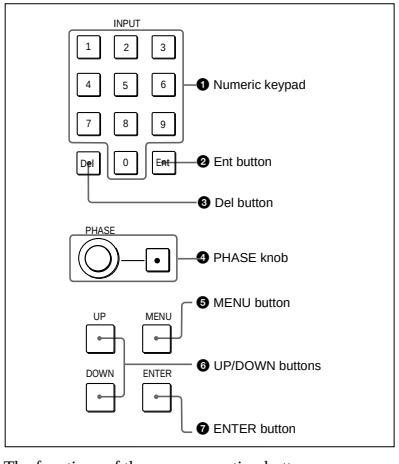


Main Menu	Level 1	Level 2...
MEMORY CARD D	SAVE D1	NEW NAME D11
	LOAD D2	
	DELETE D3	
	FORMAT D4	
COPY E	MONITOR ADDRESS E1	ALL E11
		CONTROL PRESET E12
		COLOR TEMP E13
		SET UP E14
STATUS F	STATUS (1/3) F1	
	STATUS (2/3) F2	
	STATUS (3/3) F3	
MAINTENANCE G		
KEY PROTECT H		

Basic Menu Operations

Menu Operation Buttons

The menus are operated using the menu operation buttons on the front panel.



The functions of the menu operation buttons are described below.

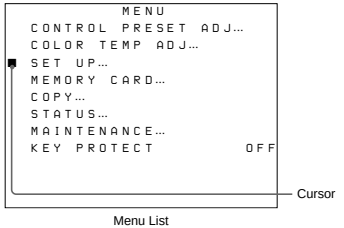
Button	Function
❺MENU button	Displays the Menus. Goes back to the menu of the upper level (on the Main Menu, goes back to the normal picture).
❻UP button	Moves the cursor upward. In setting mode, increases the setting and adjustment values.
❻DOWN button	Moves the cursor downward. In setting mode, decreases the setting and adjustment values.
❹PHASE knob	By turning this knob clockwise, the cursor moves upward. In setting mode, increases the setting and adjustment values (has the same function as UP button). By turning this knob counterclockwise, the cursor moves downward. In setting mode, decreases the setting and adjustment values (has the same function as DOWN button).
❷Ent button ❼ENTER button	Executes the items selected and settings.
❸Del button	Deletes the values and characters entered.
❶Numeric keypad	Enters the numerical values.

Menu Operation

Follow the steps described below to display the menu and perform the adjustment or setup you wish.

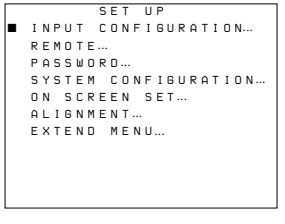
1 Press the MENU button ❺.
The Menu List is displayed.

2 Using the UP/DOWN buttons ❻ or PHASE knob ❹, move the cursor to the desired item. (Example: select the SET UP menu by pressing the DOWN button.)

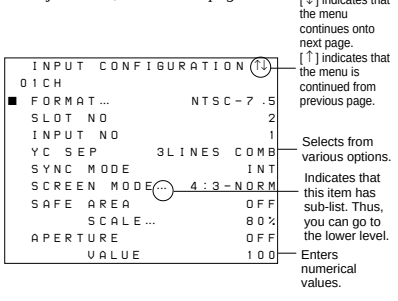


Menu List

3 Press the ENTER button ❼.
The Level 1 of the selected menu is displayed.



4 Repeat steps **2** and **3** until the desired menu is displayed.
For more information about setting and adjustments, see the next page.


INPUT CONFIGURATION ↑↓
01CH
■ FORMAT… NTSC-7.5
SLOT NO 2
INPUT NO 1
YC SEP 3LINES COMB
SYNC MODE INT
SCREEN MODE… 4:3-NORM
SAFE AREA OFF
SCALE… 80%
APERTURE OFF
VALUE 100
[↓] indicates that the menu continues onto next page.
[↑] indicates that the menu is continued from previous page.
Selects from various options.
Indicates that this item has sub-list. Thus, you can go to the lower level.
Enters numerical values.

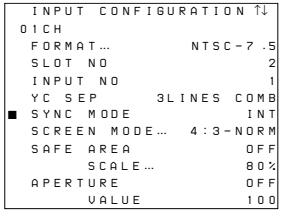
To abort menu operation
Press the MENU button. The menu of the upper level is displayed.
The setting or adjustment being performed is canceled, and data loading or saving is aborted.

If "NG" or "ERROR" appears during menu operation
Press the MENU button to return to the menu in use.

Choosing one of two or more selections

Selecting in yellow text

1 Using the UP/DOWN buttons or PHASE knob, move the cursor to the desired item and press the ENTER or Ent button.
The selected item is displayed in yellow text and set to setting mode.

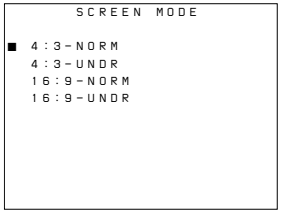


2 Using the UP/DOWN buttons or PHASE knob, change the setting.

3 Press the ENTER or Ent button.
The setting is confirmed (The item is displayed in white text again).

Selecting from the setting list

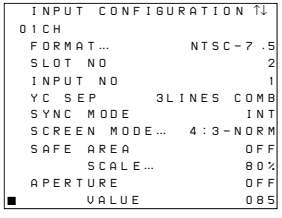
1 Using the UP/DOWN buttons or PHASE knob, move the cursor to the desired item in the setting list.



2 Press the ENTER button.
The display returns to the menu of the upper level, and the selected setting is executed.

Entering a numerical value

1 Using the UP/DOWN buttons or PHASE knob, move the cursor to the desired item and press the ENTER or Ent button.
The selected item is displayed in yellow text and set to setting mode.



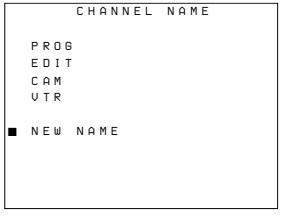
(Continued)

2 Set the value in one of the following three ways:
- Enter the value directly using the numeric keypad
- Select the value using the UP/DOWN buttons
- Select the value using the PHASE knob

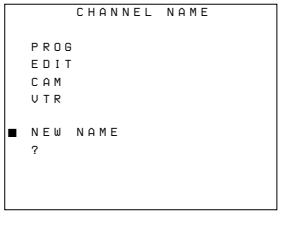
3 Press the ENTER button.
The setting is confirmed (The item is displayed in white text again).

Entering characters

1 Display the setting menu and set the cursor to NEW NAME using the UP/DOWN buttons or PHASE knob.



2 Press the ENTER button.
"?" is displayed in yellow. The "?" indicates the position where character input is possible.

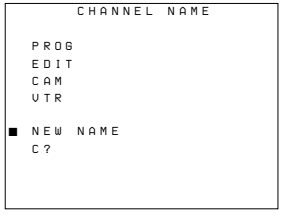


3 Select the character you wish to enter using the UP/DOWN buttons or PHASE knob. When you press the UP button, or turn the PHASE knob clockwise, the characters and symbols appear in the order shown below.

A, B, ...Y, Z, 0, 1, ...8, 9, (,), :, ;, ., -, +, /, &, CH, (space), ?

If you press the DOWN button or turn the PHASE knob to the left, the characters and symbols appear in the reverse order described above.

4 Press the ENTER button.
The selected character is entered.



5 Repeat steps **3** and **4** until all the characters are entered, then press the ENTER button.
The selected characters are confirmed, and the display returns to the menu of the previous level.

To correct the entered character
Press the Del button on the numeric keypad. The character on the left side of the "?"(in yellow) is deleted.

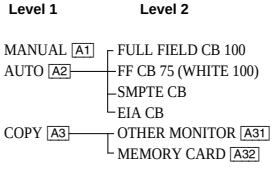
Preset Adjustment of the Picture Level Control Knobs — CONTROL PRESET ADJ Menu

Overview

The preliminary adjustment of contrast, brightness, chroma, and phase are carried out with the CONTROL PRESET ADJ menu to set the preset values to the knobs for the above-mentioned adjustments.

Preset values can be set in the following ways:
- Adjustment with the MANUAL knobs
- Automatic adjustment (An external color bar signal is necessary.)
- Copying data from other BVM-series monitors that have been connected via the serial remote connector, or from data stored in monitor memory cards.

Structure of the CONTROL PRESET ADJ Menu A



Setting Lists in the CONTROL PRESET ADJ Menu

This section explains the setting lists displayed in the menu.

How to read the setting lists

- For purposes of explanation, each setting list is preceded by a menu number. These numbers are not displayed on the screen.
  For more information about the menu number, see "About menu numbers" on page 19.
- The arrow mark (⇨) refers you to another setting list that appears after you make the setting, or to an operation that is carried out as a result of the setting. When there is no arrow mark, the menu does not have any sub-list.

A CONTROL PRESET ADJ menu

Select the setting method.
MANUAL: Set with the MANUAL knobs. ⇨A1
AUTO: Set by automatic adjustment. ⇨A2
COPY: Copy data from elsewhere. ⇨A3

A1 MANUAL menu

Adjust values by turning the CHROMA, BRIGHT, CONTRAST and/or PHASE knobs. After the adjustment, press the ENTER button to confirm the adjusted values.
PHASE: xxxx
CHROMA: xxxx
BRIGHT: xxxx
CONTRAST: xxxx

When you want to erase characters from the screen while adjusting manually
Press the F1 button. The characters disappear. To display characters, press the F1 button again.

To reset the setting to the default
Press the corresponding MANUAL button. The adjusted value is reset to 1000 (default).

A2 AUTO menu

Select the color bar signal to be used for automatic adjustment. ⇨Adjustment is carried out.
FULL FIELD CB 100: 100% full-field color bar
FF CB 75 (WHITE 100): 75% full-field color bar (with 100 % white signal)
SMPTE CB: SMPTE standard color bar
EIA CB: EIA standard color

A3 COPY menu

Select the source to be copied from.
OTHER MONITOR: Copy data from another monitor. ⇨A31
MEMORY CARD: Copy data from a memory card. ⇨A32

A31 OTHER MONITOR menu

Input the address of the monitor from which the data will be copied. ⇨ Copy is carried out.
MONITOR ADDRESS: Input the address.

A32 MEMORY CARD menu

Select the file name. ⇨ Copy is carried out.
FILE NAME: Select the file name.

Adjusting the Color Temperature — COLOR TEMP ADJ Menu

Overview

The color temperature is adjusted with the COLOR TEMP ADJ menu. The color temperature can be set to one of STD, COL1 or COL 2 for each channel.
Use the factory setting value or the adjusted value as an original values to shorten the adjustment time.

Color temperature adjustment can be made in the following three ways:

- Knob adjustment
  Adjust the color temperature with the bias and gain knobs manually.
- Automatic adjustment using a probe
  You can use the following probes for automatic adjustment of color temperature. Except for the Sony BKM-14L, a cable is required to connect the color analyzer to the monitor.

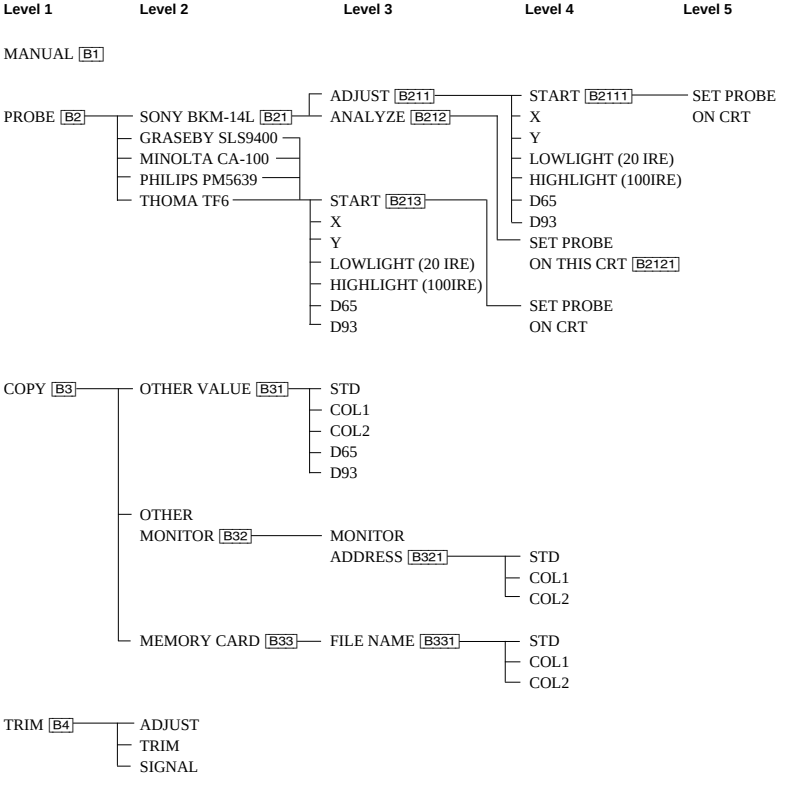
Manufacturer	Probe Model Name
SONY	BKM-14L (no cable required)
GRASEBY	SLS 9400
MINOLTA	CA-100
PHILIPS	PM 5639
THOMA	TF6

For more information about the cable specification required and about the connection, see "Connection Cable Specifications for Color Temperature Probes" on page 54.

- Copying other data
  Copying data from other BVM-series monitors that have been connected via the serial remote connector, or from data stored in monitor memory cards.

Chapter 2 Menu

Structure of the COLOR TEMP ADJ Menu B



The lower levels of GRASEBY SLS9400, MINOLTA CA-100, PHILIPS PM5639 and THOMA TF6 are the same as B213 in level 3 and lower than that.

Setting Lists in the COLOR TEMP ADJ Menu

This section explains the setting lists displayed in the menu.

How to read the setting lists

- For purposes of explanation, each setting list is preceded by a menu number. These numbers are not displayed on the screen.
  For more information about the menu number, see "About menu numbers" on page 19.
- The arrow mark (⇨) refers you to another setting list that appears after you make the setting, or to an operation that is carried out as a result of the setting. When there is no arrow mark, the menu does not have any sub-list.

B COLOR TEMP ADJ menu (STD/COL1/COL2)

Select the adjustment method.
MANUAL: Set with the MANUAL knob. ⇨B1
PROBE: Set using a probe. ⇨B2
COPY: Copy data from elsewhere. ⇨B3
TRIM: Perform fine adjustments after setting the color temperature. ⇨B4

B1 MANUAL menu (STD/COL1/COL2)

Adjust the gain and bias manually.
ADJUST: Adjust the gain and bias. To shift between gain adjustment and bias adjustment, press UP/DOWN buttons. Use appropriate knobs in each adjustment as described below. After the adjustment, press the ENTER button to confirm the adjusted values.
RED: CONTRAST knob (Adjust the R gain or bias with the CONTRAST knob.)
GREEN: BRIGHT knob (Adjust the G gain or bias with the BRIGHT knob.)
BLUE: CHROMA knob (Adjust the B gain or bias with the CHROMA knob.)
LUMINANCE: PHASE knob (Adjust luminance with the PHASE knob.)

To reset RED/GREEN/BLUE to the value before adjustment
When you are adjusting the gain or bias using the MANUAL adjustment knobs, you can reset the setting to the one before adjustment by pressing the corresponding MANUAL button.
To reset all of settings at the same time, press the PHASE button.

Note
You cannot reset the setting after you press the ENTER button.

ORIGINAL VALUE: Set the initial value.
STD: Use common data (factory setting: D93).
COL1: Use common data (factory setting: D65).
COL2: Use common data (factory setting: D93).
SIGNAL: Select the white signal to be used for adjustment.
INT: Use an internal signal. Simultaneously with the adjustment of the gain and bias, the 100 IRE and 20 IRE signals are automatically switched.
EXT: Use an external input signal. When adjusting the gain and bias, input the proper signal.

To access the MANUAL menu directly
When the F2 button is assigned as the short-cut key to the MANUAL menu, you can directly access the MANUAL menu that corresponds to the color temperature setting set to the image on the screen.
For details of how to assign the short-cut key, see "Setting the Power-Up Conditions (SET UP 4) - SYSTEM CONFIGURATION Menu" on page 39.

B2 PROBE menu(STD/COL1/COL2)

Select the probe for color temperature adjustment.
SONY BKM-14L...: Use the BKM-14L. ⇨B21
GRASEBY SLS 9400...: Use the SLS 9400. ⇨B213
MINOLTA CA-100...: Use the CA-100. ⇨B213
PHILIPS PM 5639...: Use the PM 5639. ⇨B213
THOMA TF6...: Use the TF6. ⇨B213

- If you cannot execute an ADJUST or ANALYZE menu operation when using the Sony BKM-14L probe, try again after disconnecting and reconnecting the probe.
- When using the Thoma TF6 probe, set the TF6 PRINT menu to off.

B13 COPY SOURCE menu (STD/COL1/COL2)

Select the adjustment method and the source to be copied from.
OTHER VALUE: Copy data from one of STD, COL 1 or COL 2. ⇨B31
OTHER MONITOR: Copy data from another monitor. ⇨B32
MEMORY CARD: Copy data from a memory card. ⇨B33

B4 TRIM menu (STD/COL1/COL2)

Trim the original setting by selecting ADJUST.
ADJUST: Adjust the gain and bias. To shift between gain adjustment and bias adjustment, press UP/DOWN buttons. Use appropriate knobs in each adjustment as described below. After the adjustment, press the ENTER button to confirm the adjusted values.
RED: CONTRAST knob (Adjust the R gain or bias with the CONTRAST knob.)
GREEN: BRIGHT knob (Adjust the G gain or bias with the BRIGHT knob.)
BLUE: CHROMA knob (Adjust the B gain or bias with the CHROMA knob.)
LUMINANCE: PHASE knob (Adjust luminance with the PHASE knob.)

To reset RED/GREEN/BLUE to the value before adjustment
When you are adjusting the gain or bias using the MANUAL adjustment knobs, you can reset the setting to the one before adjustment by pressing the corresponding MANUAL button.
To reset all of settings at the same time, press the PHASE button.

TRIM: Select whether to add the fine adjustment to the original setting (gain and bias set in MANUAL menu B1).
APPLY: Adds the fine adjustment to the original setting.
When APPLY is selected, "XX/TRIM" (XX: the selected color temperature among STD, COL 1 or COL 2) appears on the left top on the COLOR TEMP ADJ menu.
NOT APPLY: Reset the setting to the original setting (gain and bias set in MANUAL menu B1).
SIGNAL: Select the white signal to be used for adjustment.
INT: Use an internal signal. Simultaneously with the adjustment of the gain and bias, the 100 IRE and 20 IRE signals are automatically switched.
EXT: Use an external input signal. When adjusting the gain and bias, input the proper signal.

Note
Even if NOT APPLY of the TRIM item is selected, pressing the ENTER button to confirm the adjusted values results in that APPLY will be selected.

B21 PROBE menu (STD/COL1/COL2)

Select the BKM-14L operation.
ADJUST: Perform automatic color temperature adjustment. ⇨B211
ANALYZE: Display readout values on the screen. ⇨B212

B31 OTHER VALUE menu (STD/COL1/COL2)

Select STD, COL1,or COL2. ⇨ Copy is carried out.
STD: Copy common data (factory setting: D93).
COL1: Copy common data (factory setting: D65).
COL2: Copy common data (factory setting: D93).
D65: Copy the color temperature of D65.
D93: Copy the color temperature of D93.

B32 OTHER MONITOR menu (STD/COL1/COL2)

Specify the address number of the monitor.
MONITOR ADDRESS: Input the address number of the monitor from which the data will be copied. ⇨B321

B33 MEMORY CARD menu

Select the file name. ⇨B331
FILE NAME: Select the file name.

B211 ADJUST menu (STD/COL1/COL2)

To start adjustment, proceed as follows.
When you use the previously adjusted values for adjustment, you can make start adjustment by selecting START without perform operations step (1) and step (2).

(1) Select either D65 or D93.
Rather than selecting D65 or D93, you may instead enter the values of the CIE 1931 color system x and y coordinates.
(2) Enter values for LOWLIGHT and HIGHLIGHT.
(3) Select START.

START: Start adjustment. ⇨B2111
X: Enter the x coordinate.
Y: Enter the y coordinate.
LOW LIGHT (20IRE): Enter the luminance (cd/m^2) for low light.
HIGH LIGHT (100IRE): Enter the luminance (cd/m^2) for high light.
D65: Use D65 setting.
D93: Use D93 setting.

B212 ANALYZE menu (STD/COL1/COL2)

The following message appears. Perform operation according to the message to enable the BKM-14L to read the color system and luminace value.

SET PROBE ON THIS CRT
PRESS ENTER

Attach the BKM-14L on the center of the CRT and press the ENTER button. ⇨B2121
Once the BKM-14L has carried out calibration, the BKM-14L can start analyze the monitor's performance.

B321 MONITOR ADDRESS menu (STD/COL1/COL2)

Select STD, COL1 or COL2. ⇨ Copy is carried out.
STD: Copy common data (factory setting: D93).
COL1: Copy common data (factory setting: D65).
COL2: Copy common data (factory setting: D93).

B331 FILE NAME menu (STD/COL1/COL2)

Select STD, COL1, or COL2 of the memory card data.
⇨ Copy is carried out.
STD: Copy common data (factory setting: D93).
COL1: Copy common data (factory setting: D65).
COL2: Copy common data (factory setting: D93).

B2111 COLOR TEMP ADJ menu (STD/COL1/COL2)

The following message appears. Perform operation according to the message to start adjustment.

SET PROBE ON CRT
PRESS ENTER

Adjustment starts when the probe is placed against the center of the screen and the ENTER button is pressed.

B2121 ANALYZE menu (STD/COL1/COL2)

Display color temperature and luminance readout values from the BKM-14L.
X: xxxx: Display the x coordiate of the color system.
Y: xxxx: Display the y coordiate of the color system.
L: xxxx: Display the luminance value.

Setting the Input Configuration (SET UP 1) — INPUT CONFIGURATION Menu

Overview

Data pertaining to the input signals are set with the INPUT CONFIGURATION menu.
When a channel number (1 to 90) is entered with the numeric keypad, it is then possible to set which input connector on the rear panel will be assigned to that channel number, and select the type of signal that will be connected. The channel numbers from 91 to 99 are assigned to internal signals.
091: PLUGE signal (Picture Line Up Generating Equipment)
092: 20% gray signal
093: 100% white signal
094: five-step gray scale signal
095: cross hatch signal
096: cross hatch signal
097: dot signal
098: cross hatch signal
099: 0% black signal

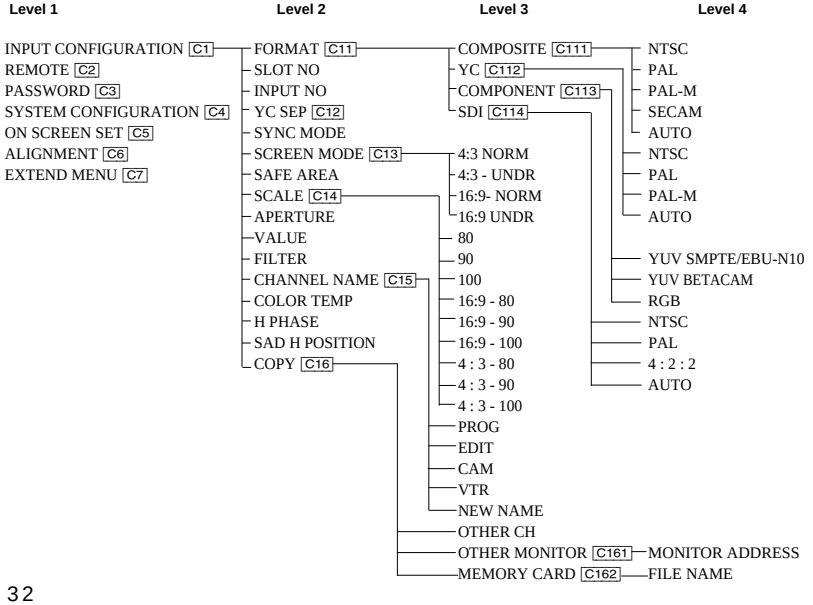
Assigning slot and connector numbers

Set which input connector on which slot will be assigned to the current channel. The slots are numbered from the left, as seen when facing the rear panel, with the REMOTE connectors slot being number 1, the input option slots number 2, and the analog input connectors slot being number 6. The connectors are numbered 1 to 6 (from the top) for the slot.

Assigning the signal type and format

The signal type and format which can be assigned to each channel number vary, depending on what adaptors (not supplied) are installed in the rear panel.

Structure of the INPUT CONFIGURATION Menu C1



Setting Lists in the INPUT CONFIGURATION Menu

This section explains the setting lists displayed in the menu.

How to read the setting lists

- For purposes of explanation, each setting list is preceded by a menu number. These numbers are not displayed on the screen.
  For more information about the menu number, see "About menu numbers" on page 19.
- The arrow mark (⇨) refers you to another setting list that appears after you make the setting, or to an operation that is carried out as a result of the setting. When there is no arrow mark, the menu does not have any sub-list.

C1 INPUT CONFIGURATION menu (1/2)

Set input signal data for each channel.

xxCH: Current channel is indicated. To change the channel, enter a channel number with the numeric keypad. The settings below will be stored as information about the signal to be connected to this channel.

FORMAT: Select the input signal type. ⇨C11

SLOT NO: Enter the slot number.

INPUT NO: Enter the input connector number.

YC SEP: Select Y/C separation filter. ⇨C12

SYNC MODE: Select the sync signal.
- **INT:** Use an internal sync signal.
- **EXT:** Use an external sync signal.

SCREEN MODE: Select the scan size. ⇨C13

SAFE AREA: Choose whether or not to display the safe area (OFF or ON).

SAFE AREA SCALE: Select the modes for safe area. ⇨C14

APERTURE: Choose whether to use aperture adjustment or not (OFF or ON).

APERTURE VALUE: Enter the aperture adjustment value (0 to 200).

C1 INPUT CONFIGURATION menu (2/2)

Set input signal data for each channel.

xxCH: Current channel is indicated. To change the channel, enter a channel number with the numeric keypad. The settings below will be stored as information about the signal to be connected to this channel.

FILTER: Switch the filter operation (OFF or ON) when the monochrome display is selected.

CHANNEL NAME: Give the channel a name. ⇨ C15

COLOR TEMP: Set the color temperature. Select STD, COL1 or COL2.
- **STD:** Use common data (factory setting: D93).
- **COL1:** Use common data (factory setting: D65).
- **COL2:** Use common data (factory setting: D93).

H PHASE: Set the horizontal picture position (–128 to +127).

SAD H POSITION: Adjust the horizontal display position of the safety area (–128 to +127).

COPY: Select a method for copying data from elsewhere. ⇨C16

Note

For H PHASE and SAD H POSITION data, if values above or below the allowable range are entered, the monitor will not operate correctly.

C11 FORMAT menu (xxCH)

Select the signal format.

COMPOSITE: Composite signal ⇨ C111

YC: Y/C signal ⇨ C112

COMPONENT: Component or RGB signal ⇨ C113

SDI: Serial digital signal ⇨ C114

Note

If there is no input connector or decoder corresponding to a format, that format will not be selectable (the cursor will skip over that item).

C12 YC SEP menu

Select a Y/C separation filter.

TRAP/BPF: Select TRAP/BPF filter.

2 LINES COMB: Select 2 LINES COMB filter.

3 LINES COMB: Select 3 LINES COMB filter.

C13 SCREEN MODE menu (xxCH)

Select the scan size.

4:3-NORM: Overscanned 4:3 aspect ratio. (when not using 16:9 mask)

4:3-UNDR: Underscanned 4:3 aspect ratio. (when not using 16:9 mask)

16:9-NORM: Overscanned 16:9 aspect ratio.

16:9-UNDR: Underscanned 16:9 aspect ratio.

C14 SAFE AREA SCALE

Select the setting for each items of SAFE AREA setting list.

80: Displays a 80% safe area in 4:3 screen.

90: Displays a 90% safe area in 4:3 screen.

100: Displays an 100% safe area in 4:3 screen.

16:9-80: Displays a 80% of 16:9 aspect ratio safe area in 4:3 screen.

16:9-90: Displays a 90% s16:9 aspect ratio safe area in 4:3 screen.

16:9-100: Displays an 100% 16:9 aspect ratio safe area in 4:3 screen.

4:3-80: Displays a 80% 4:3 aspect ratio safe area in 16:9 screen.

4:3-90: Displays a 90% 4:3 aspect ratio safe area in 16:9 screen.

4:3-100: Displays an 100% 4:3 aspect ratio safe area in 16:9 screen.

C15 CHANNEL NAME menu (xxCH)

Give the channel a name. Select a preset name, or enter a new one.

PROG: Program signal.

EDIT: Signal from an editor.

CAM: Camera signal.

VTR: Signal from a VTR.

NEW NAME: Enter a new name. (Up to 20 characters can be entered and up to six characters from the head of the name are displayed in the INPUT CONFIGURATION menu.)

C16 COPY menu (xxCH)

Select the source to be copied from.

OTHER CH: Copy data from another channel. Enter the channel number.
When the input channel number is deleted with the Del button, the number "1" appears instead. Restore the previous setting by pressing the MENU button, then re-enter the channel number. (Setting with the UP/DOWN buttons or PHASE knob is possible.)

OTHER MONITOR: Copy data from another monitor. ⇨C161

MEMORY CARD: Copy data from a memory card. ⇨C162

C111 COMPOSITE menu (xxCH)

Select the format of a composite signal.

NTSC: SETUP 7.5 or 0.

PAL: S (simple) or D (delay)

PAL-M: S (simple) or D (delay)

SECAM

AUTO: The format of the input signal is detected and switched automatically. 1)

1) It will take a few seconds to detect the format of an input signal when AUTO is selected. It is recommended that a particular format be selected if it is determined.

Notes

- Even when selecting AUTO, also select the NTSC, PAL, or PAL-M format.
- If there is no input connector or decoder corresponding to a format, that format will not be selectable (the cursor will skip over that entry).

C112 Y/C menu (xxCH)

Select the format of a Y/C signal.

NTSC: SETUP 7.5 or 0.

PAL: S (simple) or D (delay)

PAL-M: S (simple) or D (delay)

AUTO: The format of the input signal is detected and switched automatically. 1)

1) It will take a few seconds to detect the format of an input signal when AUTO is selected. It is recommended that a particular format be selected if it is determined.

Notes

- Even when selecting AUTO, also select the NTSC, PAL, or PAL-M format.
- If there is no input connector or decoder corresponding to a format, that format will not be selectable (the cursor will skip over that entry).

C113 COMPONENT menu (xxCH)

Select the component signal format, or RGB.

YUV SMPTE/EBU-N10

YUV BETACAM: SETUP 7.5 or 0.

RGB

C114 SDI menu (xxCH)

Select the format of the serial digital signal 1).

NTSC: SETUP 7.5 or 0.

PAL: S (simple) or D (delay)

4:2:2

AUTO: The format of the input signal is detected and switched automatically. 1)

1)
- It will take a few seconds to detect the format of an input signal when AUTO is selected. It is recommended that a particular format be selected if it is determined.
- If the serial digital signal is not properly displayed in SDI AUTO mode, re-enter the channel number.

C161 OTHER MONITOR menu (xxCH)

Enter the address number of the source monitor.

⇨ Copy is carried out.

MONITOR ADDRESS: Enter the address number of the monitor from which to copy data.

C162 MEMORY CARD menu (xx CH)

Select the file name.⇨ Copy is carried out.

FILE NAME: Select the file name.

Assigning the Remote Control Functions (SET UP 2) — REMOTE Menu

Overview

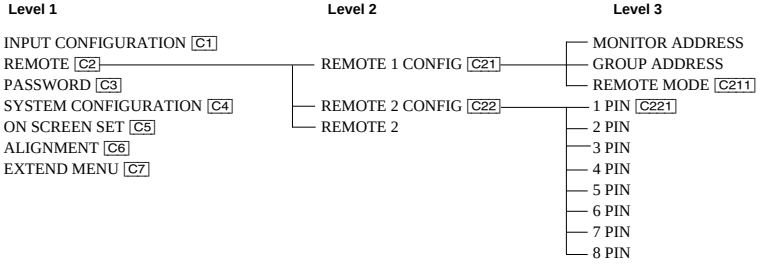
The remote control functions are set with the REMOTE menu. With this monitor, both serial remote control (REMOTE 1) and parallel remote control (REMOTE 2) are possible. It is possible to simultaneously use the REMOTE 1, and REMOTE 2 provided with BKM-10R/11R, the integrated control unit monitors HDM-14E5U, BVM-14E5U/14E5E/14F5U/14F5E/14G5U/14G5E/14G5A, for control, but commands from REMOTE 2 have priority. Therefore, it is impossible for the control panel or REMOTE 1 to change items set by REMOTE 2.
There is no priority order between commands from REMOTE 1 and the BKM-10R/11R control panel; it is possible to set APERTURE to ON from REMOTE 1 and then set it to OFF with a control panel operation.

About monitor address and group numbers

The monitor control units BKM-10R/11R or control unit monitors HDM-14E5U, BVM-14E5U/14E5E/14F5U/14F5E/14G5U/14G5E/14G5A are able to control up to 32 monitors connected via serial remote connector (using the REMOTE 1 connector). By giving each monitor a monitor address and group number, it is possible to control just a specific monitor or monitor group.
With the REMOTE menu, each monitor can be set with a monitor address and group number, between 1 and 99.
The ADDRESS menu is used to select a particular monitor or group by entering a monitor number or group number.

For information about the ADDRESS menu, see "Selecting the Monitor to Control —ADDRESS Menu" on page 49. The address number must differ from one monitor to another. If two or more monitors have the same address number, an operation error occurs.

Structure of the REMOTE Menu C2



Setting Lists of the REMOTE Menu

This section explains the setting lists displayed in the menu.

How to read the setting lists

- For purposes of explanation, each setting list is preceded by a menu number. These numbers are not displayed on the screen.
  For more information about the menu number, see "About menu numbers" on page 19.
- The arrow mark (⇨) refers you to another setting list that appears after you make the setting, or to an operation that is carried out as a result of the setting. When there is no arrow mark, the menu does not have any sub-list.

C2 **REMOTE menu**
Select the type of remote control.
REMOTE 1 CONFIG: Set the address and group number of the monitor controlled via the REMOTE 1 (serial remote control) connector. ⇨C21
REMOTE 2 CONFIG: Set the pin assignments for the REMOTE 2 (parallel remote control) connector. ⇨C22
REMOTE 2: Select whether parallel remote control will be used or not (ON or OFF).

C21 **REMOTE 1 CONFIG menu**
Set the monitor address and group number.
MONITOR ADDRESS: Enter a number.
GROUP ADDRESS: Enter a number.
REMOTE MODE: Select the remote mode. ⇨C211

C22 **REMOTE 2 CONFIG**
Select the REMOTE 2 connector pins for which you want to change the function. The factory settings for each pin are given below. ⇨C221
1 PIN: CH01
2 PIN: CH02
3 PIN: EXT SYNC
4 PIN: MONO
5 PIN: SAFE AREA ON
6 PIN: unused
7 PIN: unused
8 PIN: TALLY

C211 **REMOTE MODE menu**
Select a remote mode according to the type of monitors connected through the REMOTE 1 connector.
When only Sony BVM-xxE/F/G or HDM-xxE series monitors are connected: set REMOTE MODE to 0.
When a Sony BVM-xx11/16 series monitor or a Sony PVM monitor (with BKM-103 Serial Remote Interface Kit installed) is connected: set REMOTE MODE to 1 and enter a number over 64 as the MONITOR ADDRESS for each connected Sony BVM-xxE/F/G and HDM-xxE series monitor.

C221 **1-8 PIN (1/2) menu**
Assign a function to the selected pin.
CH: Select a channel number. Enter the desired channel number with the numeric keypad.
----: Set to unused.
UNDER SCAN: Set underscan on or off.
16:9: Set a 16:9 aspect ratio on or off.
H DELAY: Set the horizontal sync display on or off.
V DELAY: Set the vertical sync display on or off.
EXT SYNC: Set the synchronization to external sync signals enabled or disabled.
APERTURE: Set the correction of frequency characteristics enabled or disabled.
MONO: Set monochrome display on or off.

1-8 PIN (2/2) menu
Assign a function to the selected pin.
BLUE ONLY: Set the blue signal pictures display (monochrome) on or off.
R OFF: Set cutting red beams enabled or disabled.
G OFF: Set cutting green beams enabled or disabled.
B OFF: Set cutting blue beams enabled or disabled.
SAFE AREA ON: Set the safe area display on or off.
CAPTION VISION: Set Caption Vision on or off.
TALLY: Set tally signals on or off.
DEGAUSS: Set degaussing on or off.
POWER OFF: Set the monitor power on or off.

Setting the Password (SET UP 3) — PASSWORD Menu

Overview

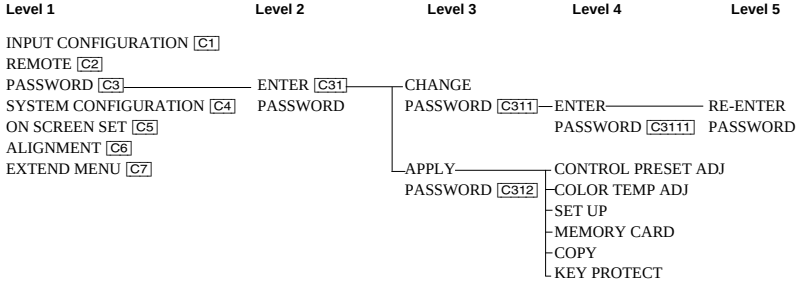
A four-digit password can be specified and applied to desired menu options to prohibit the menu settings from being changed without permission. The password is set with the PASSWORD menu.
A password is always assigned to the PASSWORD menu (factory setting: 9999).
A password for a service man can be created with the MAINTENANCE menu.

Use of the password

The message “ENTER PASSWORD” is displayed when an attempt is made to select a menu item for which the password has been applied. Then, enter the password using numeric keypad.

If the password is not entered correctly
If an incorrect password is entered, the display returns to the menu of the previous level.

Structure of the PASSWORD Menu C3



Setting Lists of the PASSWORD Menu

This section explains the setting lists displayed in the menu.

How to read the setting lists

- For purposes of explanation, each setting list is preceded by a menu number. These numbers are not displayed on the screen.
  For more information about the menu number, see “About menu numbers” on page 19.
- The arrow mark (⇨) refers you to another setting list that appears after you make the setting, or to an operation that is carried out as a result of the setting. When there is no arrow mark, the menu does not have any sub-list.

Chapter 2 Menu

C31 ENTER PASSWORD menu
Enter the password for the PASSWORD menu.
Choose what action to perform with the password.
CHANGE PASSWORD: Change the password. ⇨C311
APPLY PASSWORD: Assign the password to a menu item. ⇨C312

C311 CHANGE PASSWORD menu
Change the password.
ENTER PASSWORD: Enter a new password. ⇨C3111

C312 APPLY PASSWORD menu
Choose whether or not to apply the password to each menu.
CONTROL PRESET ADJ: Select YES or NO.
CONTROL TEMP ADJ: Select YES or NO.
SET UP: Select YES or NO.
MEMORY CARD: Select YES or NO.
COPY: Select YES or NO.
KEY PROTECT: Select YES or NO.

C3111 ENTER PASSWORD menu
Create a new password.
RE-ENTER PASSWORD
Enter the new password again and press the ENTER button. ⇨ The password is required. To change it, press the MENU button. ⇨ Return to the PASSWORD C31.

Setting Power-Up Conditions and Decoder (SET UP 4) — SYSTEM CONFIGURATION Menu

Overview

The SYSTEM CONFIGURATION menu is used for the following settings:

- Power-up condition
  This menu sets the condition of the monitor when the MAIN POWER switch on the rear panel is switched on.
  ON: Standby mode
  OFF: Operation mode
- Power-up input channel
  LAST: Set the channel to the channel that was selected at the time the power was last turned off.
  CH xx: Set the channel to a specific channel number.
- Time from power-up until degauss
  If several monitors are turned on at the same time and all start degaussing at the same time, there will be a very large current draw on the power supply for a few moments. To prevent this, the delay time between power-up and degaussing can be set for each monitor independently.
- Residual subcarrier detection (when using the BKM-24N/25P)
  It is possible to detect residual subcarrier signals from phase change by setting the decoder adpator's residual subcarrier switch on.
- Auto chroma control (ACC) (when using the BKM-27T)
- Setting of the contrast and brightness after adjusting the white balance or auto adjustment of CONTROL PRESET.
  ON: The contrast and brightness are set to the value before adjusting.
  OFF: The contrast and brightness are set to the center value (1000) after adjusting.
- Assigning shortcut to the menu to the F2 key
  Assigns the shortcut to the MANUAL menu of the COLOR TEMP ADJ menu to the F2 key. This allows you to jump directly to the MANUAL menu corresponding to the color temperature set to the currently displayed image (STD/COL 1/COL 2).
  ON: Assigns the shortcut to the MANUAL menu of the COLOR TEMP ADJ menu.
  OFF: Does not assign the shortcut to the MANUAL menu of the COLOR TEMP ADJ menu.

Structure of the SYSTEM CONFIGURATION Menu C4

Main Menu	Level 1	Level 2
SET UP C	INPUT CONFIGURATION C1	
	REMOTE C2	
	PASSWORD C3	
	SYSTEM CONFIGURATION C4	STANDBY MODE
		DEFAULT CH
		DEGAUSS DELAY
		RESIDUAL SC SW
		ACC SW
		CONT/BRT HOLD
		COL TEMP SHORT-CUT
	ON SCREEN SET C5	
	ALIGNMENT C6	
	EXTEND MENU C7	

Setting Lists of the SYSTEM CONFIGURATION Menu

This section explains the setting lists displayed in the menu.

How to read the setting lists

- For purposes of explanation, each setting list is preceded by a menu number. These numbers are not displayed on the screen.
  For more information about the menu number, see "About menu numbers" on page 19.
- The arrow mark (⇨) refers you to another setting list that appears after you make the setting, or to an operation that is carried out as a result of the setting. When there is no arrow mark, the menu does not have any sub-list.

C4 SYSTEM CONFIGURATION menu

Set each of the various items.

STANDBY MODE: Select the power-up condition when the MAIN POWER switch is turned on (OFF or ON).

DEFAULT CH: Select the power-up input channel (LAST or CH xx).

DEGAUSS DELAY: Set the time between power-up and the beginning of degaussing. Enter the desired time (in seconds).

RESIDUAL SC SW: Switch the residual switch (OFF or ON).

ACC SW: Switch the ACC switch (OFF or ON).

CONT/BRT HOLD: Select the contrast and brightness settings to the center or adjusted value after adjusting the white balance or auto adjustment of CONTROL PRESET (OFF or ON).

COL TEMP SHORT-CUT: Assign the shortcut function to the MANUAL menu of the COLOR TEMP ADJ menu to F2 key (OFF or ON).

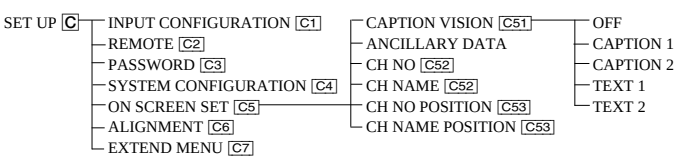
Setting the Screen Display (SET UP 5) — ON SCREEN SET Menu

Overview

The ON SCREEN SET menu is used to select the type of information that will be displayed on the screen and how that information will be displayed. The types of information that can be set are as follows.

- Caption vision
- SDI signal ancillary data blanking (when using the BKM-20D/21D)
- Channel number and name

Structure of the ON SCREEN SET Menu C5



Setting Lists of the ON SCREEN SET Menu

This section explains the setting lists displayed in the menu.

How to read the setting lists

- For purposes of explanation, each setting list is preceded by a menu number. These numbers are not displayed on the screen.
  For more information about the menu number, see "About menu numbers" on page 19.
- The arrow mark (⇨) refers you to another setting list that appears after you make the setting, or to an operation that is carried out as a result of the setting. When there is no arrow mark, the menu does not have any sub-list.

C5 ON SCREEN SET menu

Select items to be displayed on the screen.

CAPTION VISION: Select the caption display mode. ⇨C51

ANCILLARY DATA: Select whether or not to display the ancillary data in the serial digital signal (OFF or ON).

CH NO: Select the display mode of the channel number. ⇨C52

CH NAME: Select the display mode of the channel name. ⇨C52

CH NO POSITION: Select the display position for the channel number. ⇨C53

CH NAME POSITION: Select the display position for the channel name. ⇨C53

C51 CAPTION VISION menu

Select the caption display mode.

OFF: Not displayed

CAPTION 1: Displayed in Caption 1 mode.

CAPTION 2: Displayed in Caption 2 mode.

TEXT 1: Displayed in Text 1 mode.

TEXT 2: Displayed in Text 2 mode.

C51 CH NO or CH NAME menu

Select the channel number and channel name display mode.

AUTO: Disappear after displayed for a while.

ON: Displayed.

OFF: Not displayed.

C52 CH NO POSITION or CH NAME NAME POSITION menu

Select the display position.

TL: Top left

TC: Top center

TR: Top right

BL: Bottom left

BC: Bottom center

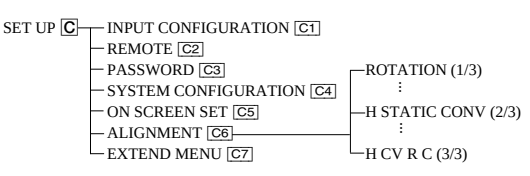
BR: Bottom right

Convergence Adjustments (SET UP 6) — ALIGNMENT Menu

Overview

The ALIGNMENT menu is used for adjusting convergence and geometry.

Structure of the ALIGNMENT Menu C6



Setting Lists of the ALIGNMENT Menu

This section explains the setting lists displayed in the menu.

How to read the setting lists

- For purposes of explanation, each setting list is preceded by a menu number. These numbers are not displayed on the screen.
  For more information about the menu number, see "About menu numbers" on page 19.
- The arrow mark (⇨) refers you to another setting list that appears after you make the setting, or to an operation that is carried out as a result of the setting. When there is no arrow mark, the menu does not have any sub-list.

C6 ALIGNMENT menu (1/3)

Adjust each item with the UP and DOWN buttons or PHASE knob.

ROTATION: Compensates for the screen rotation which occurs when the monitor is installed facing north or south.

V SIZE: Adjust the height of the picture.

V CENTER: Adjust the vertical picture position.

H SIZE: Adjust the width of the picture.

H PHASE: Adjust the horizontal picture position.

H PIN: Correct side pincushion distortion.

H KEY: Correct trapezoid distortion.

SUB CONTRAST: Adjust the center value of the contrast when the image size is changed.
This item can not be selected when 4:3-NORM is selected in the SCREEN MODE menu.

C6 **ALIGNMENT menu (2/3)**
Adjust each item with the UP and DOWN buttons or PHASE knob.
H STATIC CONV: Adjust horizontal static convergence.
V STATIC CONV: Adjust vertical static convergence.
V CONV TOP: Adjust vertical convergence at the top of the screen.
V CONV BOTTOM: Adjust vertical convergence at the bottom of the screen.

Note

Items from H CONV UPPER to HCV LB are only available for BVM-20G1U/20G1E/20G1A.

H CONV UPPER: Adjust horizontal convergence at the top of the screen.
H CONV LOWER: Adjust horizontal convergence at the bottom of the screen.

C6 **ALIGNMENT menu (3/3)**
Adjust each item with the UP and DOWN buttons or PHASE knob.
H CV R C: Adjust horizontal convergence at the center right of the screen.
H CV R T: Adjust horizontal convergence at the top right of the screen.
H CV R B: Adjust horizontal convergence at the bottom right of the screen.
H CV L C: Adjust horizontal convergence at the center left of the screen.
H CV L T: Adjust horizontal convergence at the top left of the screen.
H CV L B: Adjust horizontal convergence at the bottom left of the screen.

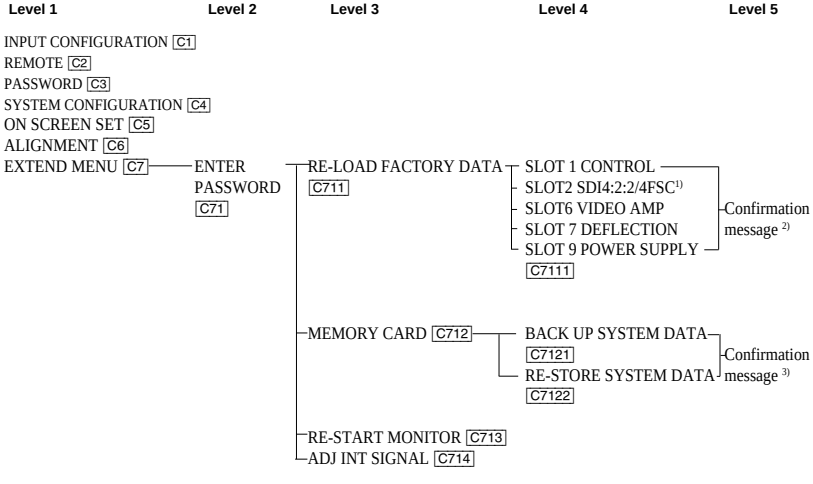
Using Extended Functions (SET UP 7) — EXTEND Menu

Overview

The following 4 functions can be executed with the EXTEND menu.

- Loading factory default data for installed boards into memory.
- Writing monitor setting and adjustment data to the monitor memory card or read setting and adjustment data from the monitor memory card.
- Restarting the monitor.
- Automatically adjusting the setup level and 100 IRE level of the internal white signal which is used in the COLOR TEMP ADJ menu (B).

Structure of the EXTEND Menu C7



1) This is displayed when the BKM-21D is installed in the SLOT 2.
2) The confirmation message appears. Selecting OK results in resetting the data and automatically turning the monitor off and on again. Selecting CANCEL results in returning to the RE-LOAD FACTORY DATA C711 menu.
3) The confirmation message appears. Selecting OK results reading the data from the monitor memory card. Selecting CANCEL results in returning to the MEMORY CARD C712 menu.

Setting Lists of the EXTEND Menu

This section explains the setting lists displayed in the menu.

How to read the setting lists

- For purposes of explanation, each setting list is preceded by a menu number. These numbers are not displayed on the screen.
  For more information about the menu number, see "About menu numbers" on page 19.
- The arrow mark (⇨) refers you to another setting list that appears after you make the setting, or to an operation that is carried out as a result of the setting. When there is no arrow mark, the menu does not have any sub-list.

C7 EXTEND menu

Enter the password (ENTER PASSWORD C71)
When the correct password is entered, the following item appears.
Choose the function to execute.

RE-LOAD FACTORY DATA: Restore factory default data for the board installed in the selected slot. ⇨C711

MEMORY CARD: Read and write setting and adjustment data by using the monitor memory card. ⇨C712

RE-START MONITOR: Restart the monitor. ⇨C713

ADJ INT SIGNAL SETUP: Automatically adjust the SETUP level and 100 IRE level of internal signals. ⇨C714

C711 RE-LOAD FACTORY DATA menu

Select a slot where a board is installed to reload factory default data to the board.⇨C7111

Note

Slots you can select are slot 6 and slot 7 only. When the optional board has been installed, you can also select slot 2.

C712 MEMORY CARD menu

Insert the monitor memory card into the MEMORY CARD slot and select the operation to perform.

BACK UP SYSTEM DATA: Write the data to the monitor memory card. ⇨C7121

RE-STORE SYSTEM DATA: Read the data from the monitor memory card. ⇨C7122

Notes

- Before using a monitor memory card, it must be formatted it with the FORMAT menu (D4).
- System data and MEMORY CARD data (D1) cannot be stored on the same memory card. To store memory card data, use another memory card.
- The BKM-12Y monitor memory card has a capacity of 256 Kbytes. It can store either system data for up to 8 monitors or 38 files of memory card data.

C713 RE-START MONITOR menu

Turn the monitor off and on again automatically.

C714 ADJUST SIGNAL menu

Adjust the SETUP level and 100 IRE level of the internal white signal which is used with the COLOR TEMP ADJ menu (B).

C7111 RE-LOAD FACTORY DATA menu

The following message appears to confirm the data reload operation.

DATA RESET TO
ITS FACTORY SETTING
AND MONITOR WILL RESTART
ARE YOU SURE?
OK: ENTER KEY
CANCEL: MENU KEY

OK: To continue, press the ENTER button. ⇨ Resets the data and automatically turn the monitor off and on again.

CANCEL: To cancel, press the MENU button. ⇨ Returns to the RE-LOAD FACTORY DATA menu. (C711)

C7121 BACK UP SYSTEM DATA menu

While the system is writing the data, a "–" mark blinks at the top right of the menu. (It takes some time to save the data.)

C7122 RE-STORE SYSTEM DATA menu

The following message appears to confirm the data restore operation.

ALL DATA WILL BE RESTORED
ARE YOU SURE?
OK: ENTER KEY
CANCEL: MENU KEY

OK: To continue, press the ENTER button. ⇨ Read the data from the monitor memory card and automatically turn the monitor off and on again.

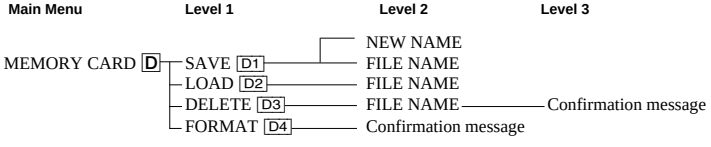
CANCEL: To cancel, press the MENU button. ⇨ Return to the MEMORY CARD menu (C712).

Monitor Memory Card Data Operations — MEMORY CARD Menu

Overview

Operations on monitor memory card data are performed with the MEMORY CARD menu.

Structure of the MEMORY CARD Menu D



Setting Lists of the MENU CARD Menu

This section explains the setting lists displayed in the menu.

How to read the setting lists

- For purposes of explanation, each setting list is preceded by a menu number. These numbers are not displayed on the screen.
  For more information about the menu number, see "About menu numbers" on page 19.
- The arrow mark (⇨) refers you to another setting list that appears after you make the setting, or to an operation that is carried out as a result of the setting. When there is no arrow mark, the menu does not have any sub-list.

D MEMORY CARD menu

Select MEMORY CARD from the menu list.

CONTROL PRESET ADJ
COLOR TEMP ADJ
SET UP
MEMORY CARD ⇨D1 to D4
COPY
STATUS
MAINTENANCE
KEY PROTECT OFF

Select the operation to perform. (It takes some time to load and save the data.)

SAVE: Write data to a monitor memory card. ⇨D1

LOAD: Read data from a monitor memory card. ⇨D2

DELETE: Delete a file. ⇨D3

FORMAT: Format a monitor memory card. ⇨D4

D1 SAVE menu

Select the name of the file to which to write data,or create a new file name.

NEW NAME: Enter a new name (max. 20 characters).

D2 LOAD menu

Select the name of the file from which to read data.

D3 DELETE menu

Select the name of the file to delete.
The following confirmation message appears.

DELETE THIS FILE?
OK: ENTER KEY
CANCEL: MENU KEY

OK: To continue, press the ENTER button. ⇨ The file is deleted.

CANCEL: To cancel, press the MENU button. ⇨ Return to the level 2 of the DELETE menu D3 (File name list).

D4 FORMAT menu

Confirm the format operation. The following confirmation message appears. All files will be deleted at formatting.

ALL FILES WILL BE DELETED!
ARE YOU SURE?
OK: ENTER KEY
CANCEL: MENU KEY

OK: To continue, press the ENTER button. ⇨ The format is performed.

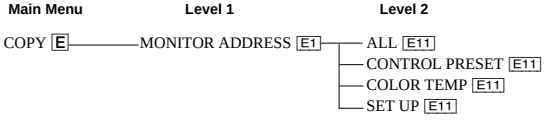
CANCEL: To cancel, press the MENU button. ⇨ Return to the MENU CARD menu (D).

Monitor-to-Monitor Data Copy — COPY Menu

Overview

When multiple monitors are connected via their serial remote ports, data can be shared between the monitors by data copy. The data copy from one monitor to another is accomplished with the COPY menu.

Structure of the COPY Menu [E]



Setting Lists of the COPY Menu

This section explains the setting lists displayed in the menu.

How to read the setting lists

- For purposes of explanation, each setting list is preceded by a menu number. These numbers are not displayed on the screen.
  For more information about the menu number, see "About menu numbers" on page 19.
- The arrow mark (⇨) refers you to another setting list that appears after you make the setting, or to an operation that is carried out as a result of the setting. When there is no arrow mark, the menu does not have any sub-list.

[E] COPY menu

Select COPY from the menu list.
CONTROL PRESET ADJ
COLOR TEMP ADJ
SET UP
MEMORY CARD
COPY ⇨[E1]
STATUS
MAINTENANCE
KEY PROTECT OFF

[E1] MONITOR ADDRESS menu

Select the copy source monitor.
MONITOR ADDRESS: Enter the address number.
⇨[E11]

[E11] COPY menu

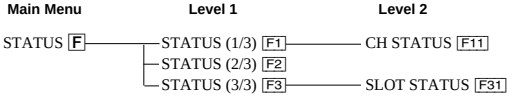
Select the data to be copied. ⇨ Copy is carried out.
ALL: Copy data for all menu settings.
CONTROL PRESET: Copy the data for the CONTROL PRESET ADJ menu settings.
COLOR TEMP: Copy the data for the COLOR TEMP ADJ menu settings.
SET UP: Copy the data for the SET UP menu settings.

Displaying Information About the Monitor — STATUS Menu

Overview

The STATUS menu is used to view general data about the monitor and information about signals assigned to the slots in the rear panel.

Structure of the STATUS Menu [F]



Setting Lists of the STATUS Menu

This section explains the setting lists displayed in the menu.

How to read the setting lists

- For purposes of explanation, each setting list is preceded by a menu number. These numbers are not displayed on the screen.
  For more information about the menu number, see "About menu numbers" on page 19.
- The arrow mark (⇨) refers you to another setting list that appears after you make the setting, or to an operation that is carried out as a result of the setting. When there is no arrow mark, the menu does not have any sub-list.

[F] STATUS menu

Select STATUS from the menu list.
CONTROL PRESET ADJ
COLOR TEMP ADJ
SET UP
MEMORY CARD
COPY
STATUS ⇨[F1]
MAINTENANCE
KEY PROTECT OFF

[F1] STATUS menu (1/3)

Specify the channel block to be detected from channel 1 to channel 99.

[F11] CH STATUS menu

Data about the current channel is displayed.
CH: channel number
SL: slot number
IN: input connector number
FORMAT: format of the input signal
NAME: channel name

[F2] STATUS menu (2/3)

Data about the monitor is displayed.
MODEL NAME: model name
SERIAL NO: serial number
OPERATION TIME: operation time (in hours)
SOFTWARE VERSION: software version

[F3] STATUS menu (3/3)

Data about circuit boards installed into the respective slots in the rear panel is displayed.
When the BKM-21D is installed in SLOT 2, the following is displayed. When it is not installed, EMPTY is displayed for SLOT 2.
SLOT1: CONTROL
SLOT2: SDI4:2:2/4FSC
SLOT6: VIDEO AMP
SLOT7: DEFLECTION
SLOT9: POWER SUPPLY

[F31] SLOT STATUS menu

Select the desired slot. Data about the optional board installed in the selected slot is displayed.
MODEL NAME: Model name of that optional board
SERIAL NO: Serial number of that circuit board

Selecting the Monitor to Control — ADDRESS Menu

Overview

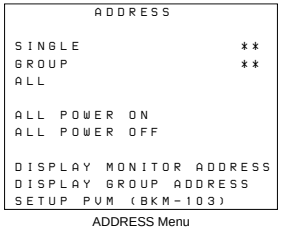
When multiple monitors are connected by a serial remote connection, the ADDRESS menu is used to choose whether one particular monitor or monitor group will be controlled, or whether operations are to be performed on all monitors together.

Displaying the ADDRESS Menu

Press the ADDRESS button.

The ADDRESS button lights, and the ADDRESS menu is displayed on the screen.

By pressing the ENTER button after selecting the item, serial remote operation becomes activated.



ADDRESS Menu

Settings made with the menu items are as follows:

Item	Function
SINGLE	Control only a specified monitor. Enter the monitor address number.
GROUP	Control only a specified monitor group. Enter the group address number.
ALL	Control all monitors.
ALL POWER ON	Turn all connected monitors on.
ALL POWER OFF	Turn all connected monitors off.
DISPLAY MONITOR ADDRESS	When this item is selected, each connected monitor displays its monitor address on its screen.
DISPLAY GROUP ADDRESS	When this item is selected, each connected monitor displays its group address on its screen.
SET UP PVM (BKM-103)	Transfer the INPUT CONFIG settings of a BVM monitor to a PVM monitor. The BKM-103 Serial Remote Interface Kit must be installed in the PVM monitor, and the monitor address of the PVM monitor must be selected using the SINGLE menu item.

Notes

- To remotely control monitors connected in serial, MONITOR ADDRESS or GROUP ADDRESS of monitors should be correctly set in the REMOTE menu.
  For details of the REMOTE menu, see "Assigning the Remote Control Functions (SET UP 2) – REMOTE Menu" on page 35.
  - In GROUP mode, when the KEY PROTECT function is set to ON, the LED on the pressed function button lights, but it is deactivated. (LED of other monitors in the same group will not light.)
  - In GROUP or ALL mode, the LEDs of the function buttons will not light with controlled from the menu. (LEDs light only when you press the function button.)
  - In GROUP or ALL mode, LEDs of controlled monitor will light as follows.
    In case of SHIFT OFF before remote control operation: LEDs light in green when the SHIFT button is remotely set to OFF.
    In case of SHIFT ON before remote control operation: LEDs light in orange when the SHIFT button is remotely set to ON.
    For details, see "SHIFT button" on page 12.
- In SINGLE mode, when the data is saved or load in or from the memory card, the error message may appear due to data communication error. In such a case, clear the remote mode, then try again.
  It is recommended to save or load data to or from the memory card with the monitor which is free from the remote operation.
- When Sony BVM-xxE/F and HDM-xxE series monitors are connected together, select these monitors for each series in SINGLE mode or GROUP mode to remotely control them.

Chapter 2 Menu

Cancelling the Remote Control Mode

To cancel the remote control mode, press the ADDRESS button.

Exiting the ADDRESS Menu

To exit the ADDRESS menu, press the ADDRESS button or the MENU button.

Specifications

General

System
525 lines, 60 fields per second interlaced
625 lines, 50 fields per second interlaced

CRT
Super fine pitch Trinitron

BVM-20G1U/20G1E/20G1A

Aperture grille pitch: 0.3 mm 90 degree deflection, 30.6 mm diameter in-line gun.
Effective picture size:
387 × 291 mm (15 1/4 × 8 3/8 inches) (w/h)
483 mm (19 inches) (diagonal size)
CRT protection: EHT (extremely high tension) protection type
Warm-up time: approx. 30 minutes
Anode voltage: 23 kV with no beam current
Nominal chromaticity coordinates:

SMPTE C phosphor (BVM-20G1U)

	x	y
R	0.630	0.340
G	0.310	0.595
B	0.155	0.070

EBU phosphor (BVM-20G1E/20G1A)

	x	y
R	0.640	0.330
G	0.290	0.600
B	0.150	0.060

BVM-14G1U/14G1E/14G1A/ 14G5U/14G5E/14G5A

Aperture grille pitch: 0.25 mm 90-degree deflection, 29.4 mm diameter in-line gun.
Effective picture size:
267 × 200 mm (10 5/8 × 7 7/8 inches) (w/h)
331 mm (13 inches) (diagonal size)
CRT protection: EHT (extremely high tension) protection type
Warm-up time: approx. 30 minutes
Anode voltage: 21 kV with no beam current
Nominal chromaticity coordinates:

SMPTE C phosphor (BVM-14G1U/ 14G5U)

	x	y
R	0.630	0.340
G	0.310	0.595
B	0.155	0.070

EBU phosphor (BVM-14G1E/14G1A/ 14G5E/14G5A)

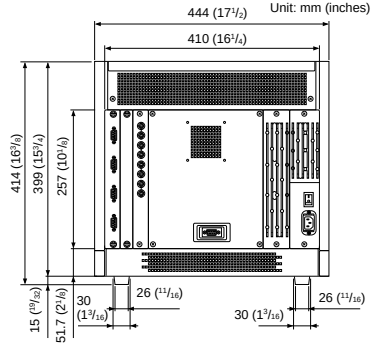
	x	y
R	0.640	0.330
G	0.290	0.600
B	0.150	0.060

Dimensions
BVM-20G1U/20G1E/20G1A:
414 × 444 × 570 (16 3/8 × 17 3/8 × 22 1/2 inches) (w/h/d)
BVM-14G1U/14G1E/14G1A:
280 × 346 × 530 (11 1/8 × 13 5/8 × 20 7/8 inches) (w/h/d)
BVM-14G5U/14G5E/14G5A:
280 × 482 × 573 (11 1/8 × 19 × 22 5/8 inches) (w/h/d)

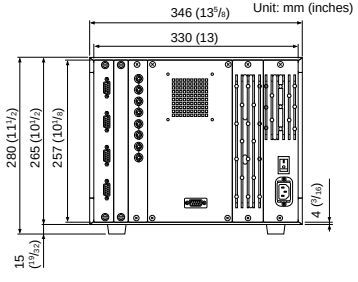
Specifications

Dimensional drawing

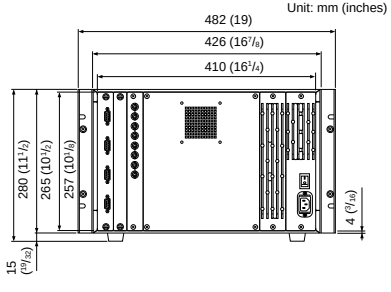
BVM-20G1U/20G1E/20G1A



BVM-14G1U/14G1E/14G1A



BVM-14G5U14G5E/14G5A



Mass
BVM-20G1U/20G1E/20G1A: approx. 36 kg (79 lb 6 oz)
BVM-14G1U/14G1E/14G1A: approx. 21 kg (46 lb 5 oz)
BVM-14G5U/14G5E/14G5A: approx. 24kg (52 lb 15 oz)

Power consumption
BVM-20G1U/20G1E/20G1A: 125W
When an optional adaptor is installed: 140 W
BVM-14G1U/14G1E/14G1A: 105W
When an optional adaptor is installed: 120 W
BVM-14G5U/14G5E/14G5A: 105W
When an optional adaptor is installed: 120 W

Power requirements
BVM-20G1U: AC100 - 120 V, 1.6 A, 50/60 Hz
BVM-20G1E/20G1A: AC 100 - 120/220 - 240 V, 1.6/0.7 A, 50/60 Hz
BVM-14G1U/G5U: AC 100 - 120 V, 1.3 A, 50/60 Hz
BVM-14G1E/14G1A/14G5E/ 14G5A: AC 100 - 120/220 - 240 V, 1.3/0.6 A, 50/60 Hz

Input/output connectors

Video input
BNC type × 3 (with loop-through outputs)
R/G/B 1 Vp-p ±6 dB, positive, high impedance
Y: 1 Vp-p ±6 dB, positive, high impedance
R-Y/B-Y: 0.7 Vp-p ±6 dB, positive, high impedance

Sync input
BNC type × 1 (with loop-through output)
Composite sync: 0.3 to 8 Vp-p, negative, high impedance

Return loss
More than 46 dB (6 MHz, with 75-ohm termination)

Remote control OPTION:
Mini-DIN 8-pin × 1
CONTROL UNIT:
D-sub 9-pin × 1
REMOTE 1:
D-sub 9-pin × 1 (with loop-through output), RS-485 serial interface
REMOTE 2:
D-sub 9-pin × 1
ISR:
D-sub 9-pin × 1

Video signal

Differential gain Less than 5% (for luminance from 0 to 100 cd/m²)
Differential phase Less than 5° (for luminance from 0 to 100 cd/m²)
Frequency response
50 Hz to 7 MHz, +1 dB/ –3 dB
DC restoration Back porch type
Black level fluctuation: less than 1% for 10 % to 90% APL input signal variation.

Synchronization

AFC time constant
2 ms
Line pull range/line hold range
Greater than ±500 Hz
Vertical blanking time
Less than 1 ms
Horizontal blanking time
Less than 10 µs.

Picture performance

Normal scan 5% overscan of CRT effective screen area (adjustable range greater than ±15%)
Underscan 3% underscan of CRT effective screen area (adjustable range greater than ±15%)
Linearity Within a central area bounded by a circle with a diameter equal to the picture height, less than 1% of the picture height, and outside the same area, about 2% of the picture height

Color temperature
D93, D65 (adjustable to other color temperatures)
Convergence error
Within a central area bounded by a circle with a diameter equal to the picture height.
BVM-20G1U/20G1E/20G1A:
Less than 0.5 mm with a central area bounded by a circle and less than 0.9 mm at any other point.
BVM-14G1U/14G1E/14G1A/14G5U/14G5E/14G5A:
Less than 0.4 mm with a central area bounded by a circle and less than 0.8 mm at any other point.
Standard luminescence
100 cd/m² (at standard 1 Vp-p 100% white signal)
Raster size stability
Less than 1% of picture height (at 100 cd/m² peak luminescence, 10 to 90% APL)
Scan delay Horizontal: Approx. 1/4 line
Vertical: Approx. 1/2 field
Resolution (at screen center, 100 cd/m² luminescence)
800 TV lines

Environmental conditions

Operating temperature
0°C to 35°C (32°F to 95°F)
Optimum operating temperature
20°C to 30°C (68°F to 86°F)
Operating humidity
0% to 90% (no condensation)

Accessories supplied

AC power cord (1)
Cord stopper (1)
Tally plate (1)
Operation manual (1)

Design and specifications are subject to change without notice.

Connection Cable Specifications for Color Temperature Probes

Special cables are required to connect color temperature probes other than the Sony BKM-14L to the monitor.

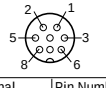
The following diagrams show specifications and pin assignments for the required cables.

Connection cable for GRASEBY SLS 9400 probe

Modular connector

Signal	Pin Number
N.C.	1
GND	2
RXD	3
TXD	4
GND	5
N.C.	6

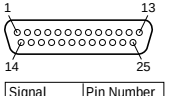
Mini DIN 8-pin connector (male)



Signal	Pin Number
1	NC
2	NC
3	RTS
4	GND
5	N.C.
6	TXD
7	+5V
8	RXD

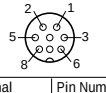
Connection cable for MINOLTA CA-100 probe

D-sub 25-pin connector (male)



Signal	Pin Number
N.C.	1
TXD	2
RXD	3
RTS	4
CTS	5
N.C.	6
GND	7
N.C.	8 to 25

Mini DIN 8-pin connector (male)



Signal	Pin Number
1	NC
2	NC
3	RTS
4	GND
5	N.C.
6	TXD
7	+5V
8	RXD

Connection cable for PHILIPS PM 5639 probe (corresponds to PHILIPS PM 5639/64 cable)

Modular connector

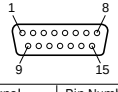
Signal	Pin Number
+5V	1
N.C.	2
RXD	3
TXD	4
N.C.	5
GND	6

Mini DIN 8-pin connector (male)

Signal	Pin Number
1	NC
2	NC
3	RTS
4	GND
5	N.C.
6	TXD
7	+5V
8	RXD

Connection cable for THOMA TF6 probe

D-sub 15-pin connector (female)



Signal	Pin Number
N.C.	1
RXD	2
TXD	3
N.C.	4
N.C.	5
N.C.	6
GND	7
N.C.	8 to 15

Mini DIN 8-pin connector (male)

Signal	Pin Number
1	NC
2	NC
3	RTS
4	GND
5	N.C.
6	TXD
7	+5V
8	RXD

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• BKM-10R

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

For customers in the USA
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

For customers in Canada
This Class A digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Pour les utilisateurs au Canada
Cet appareil numérique de la classe A respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Overview

The BKM-10R Monitor Control Unit is a control unit for Sony BVM-series color video monitors. Use it to power monitors on and off, perform menu operations, and carry out monitor setup and adjustment.

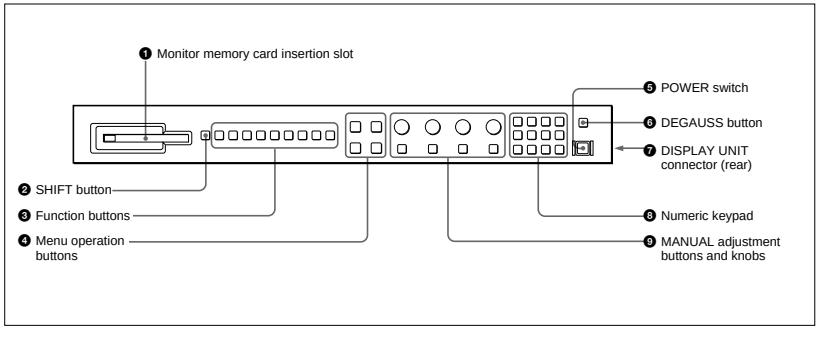
Controlling monitor groups
You can control up to 32 monitors from the BKM-10R. First, using the monitor menus, assign an address number to each monitor, divide the monitors into groups, and assign a group number to each group. Then you can use the BKM-10R to control individual monitors or monitor groups simply by entering monitor address or group numbers. You can also execute the same operation on all connected monitors, or use the BKM-10R to put all connected monitors into the same setup and adjustment state.

Setup and adjustment with the monitor memory card
You can use an optional BKM-12Y Monitor Memory Card to save and load monitor setup and adjustment data. If your system includes more than one monitor, you can use the monitor memory cards to exchange data between monitors. This makes it easy to put all monitors in your system into the same setup and adjustment state.

Attach to 20-inch monitors
You can use an optional BKM-32H Monitor Control Unit Attachment Kit to attach the BKM-10R to the BVM-20F1U/20F1E and other BVM-series color video monitors.

Rack Mounting
You can use an supplied rack mount attachment screws and an optional MB-510 Rack Mount Kit to mount the BKM-10R in an EIA standard 19-inch rack.

Location and Function of Parts


❶ Monitor memory card insertion slot
❺ POWER switch
❻ DEGAUSS button
❼ DISPLAY UNIT connector (rear)
❷ SHIFT button
❸ Function buttons
❹ Menu operation buttons
❽ Numeric keypad
❾ MANUAL adjustment buttons and knobs

❶ Monitor memory card insertion slot
Insert an optional BKM-12Y Monitor Memory Card.

❷ SHIFT button
Each of the Function buttons ❸ has a Shift On function as well as a Shift Off function. Press this button to select Shift On or Shift Off functions. Each time you press this button, its orange LED lights (Shift On) or goes out (Shift Off).

Shift On: Use the function indicated below the Function button.
Shift Off: Use the function indicated above the Function button.

❸ Function buttons

Use these buttons to control the operation of the monitor.

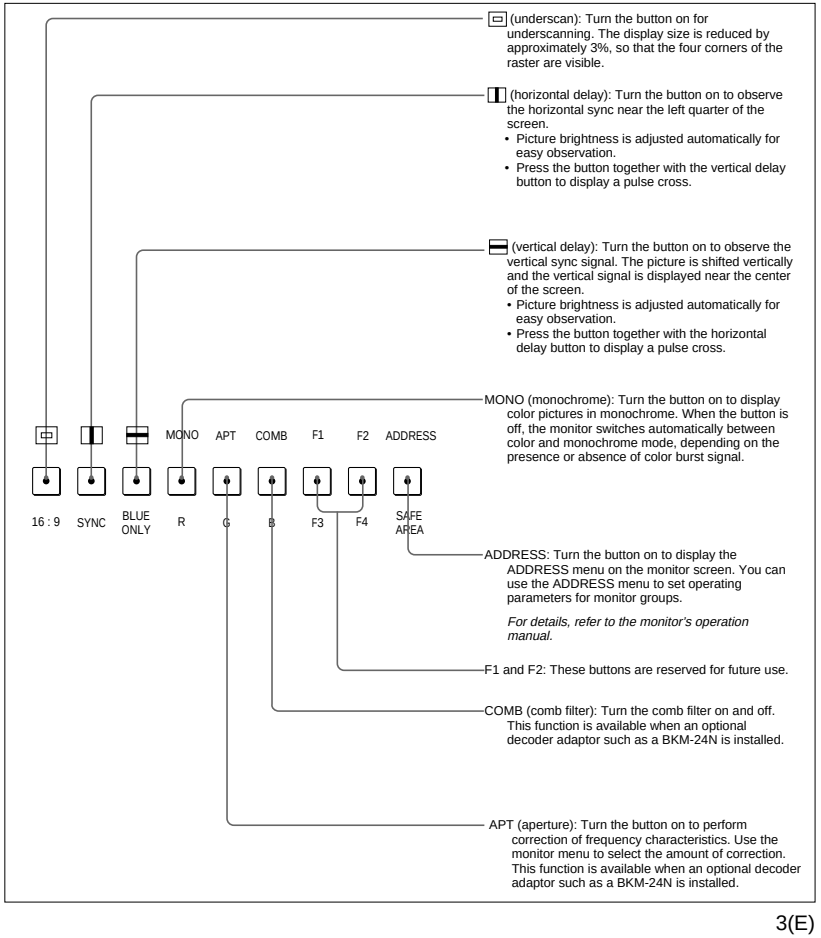
Each of these buttons has a Shift On function, indicated below the button, as well as a Shift Off function, indicated above the button. Press the SHIFT button ❷ to select the desired function.

Each time you press one of these buttons, its LED lights or goes out and the function of the button selected with the SHIFT button ❷ is turned on or off. The LED color change whether you select Shift Off functions or Shift On functions.

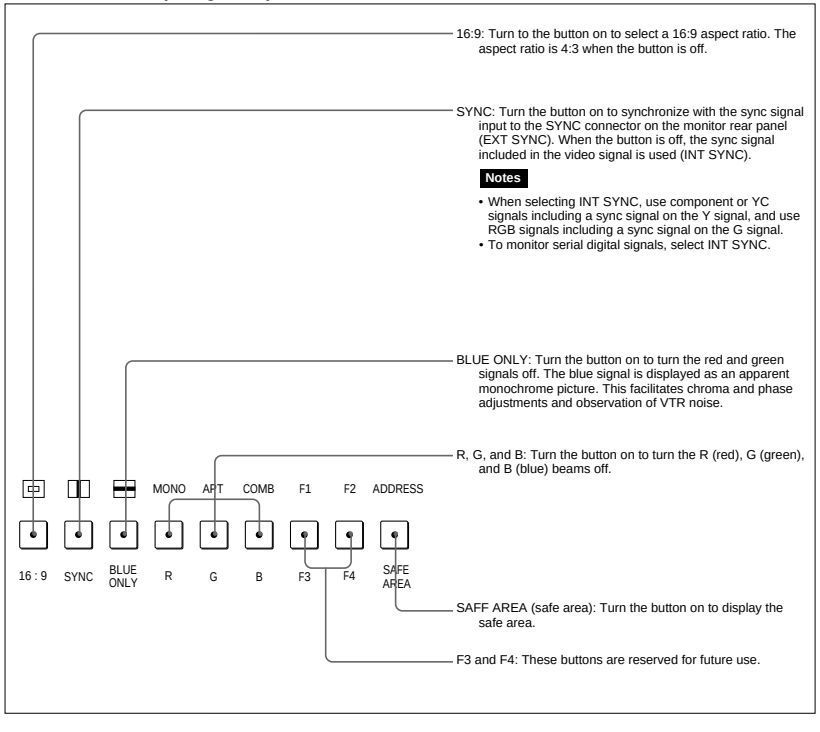
For Shift Off functions: Green LED

For Shift On functions: Orange LED

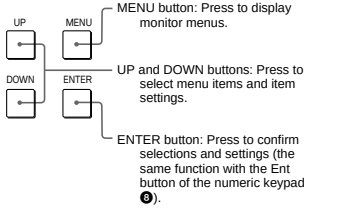
Shift Off functions (green LED)


(underscan): Turn the button on for underscanning. The display size is reduced by approximately 3%, so that the four corners of the raster are visible.
(horizontal delay): Turn the button on to observe the horizontal sync near the left quarter of the screen.
• Picture brightness is adjusted automatically for easy observation.
• Press the button together with the vertical delay button to display a pulse cross.
(vertical delay): Turn the button on to observe the vertical sync signal. The picture is shifted vertically and the vertical signal is displayed near the center of the screen.
• Picture brightness is adjusted automatically for easy observation.
• Press the button together with the horizontal delay button to display a pulse cross.
MONO (monochrome): Turn the button on to display color pictures in monochrome. When the button is off, the monitor switches automatically between color and monochrome mode, depending on the presence or absence of color burst signal.
MONO APT COMB F1 F2 ADDRESS
16 : 9 SYNC BLUE ONLY R G B F3 F4 SAFE AREA
ADDRESS: Turn the button on to display the ADDRESS menu on the monitor screen. You can use the ADDRESS menu to set operating parameters for monitor groups.
For details, refer to the monitor's operation manual.
F1 and F2: These buttons are reserved for future use.
COMB (comb filter): Turn the comb filter on and off. This function is available when an optional decoder adaptor such as a BKM-24N is installed.
APT (aperture): Turn the button on to perform correction of frequency characteristics. Use the monitor menu to select the amount of correction. This function is available when an optional decoder adaptor such as a BKM-24N is installed.

Shift On functions (orange LED)


16:9: Turn to the button on to select a 16:9 aspect ratio. The aspect ratio is 4:3 when the button is off.
SYNC: Turn the button on to synchronize with the sync signal input to the SYNC connector on the monitor rear panel (EXT SYNC). When the button is off, the sync signal included in the video signal is used (INT SYNC).
Notes
• When selecting INT SYNC, use component or YC signals including a sync signal on the Y signal, and use RGB signals including a sync signal on the G signal.
• To monitor serial digital signals, select INT SYNC.
BLUE ONLY: Turn the button on to turn the red and green signals off. The blue signal is displayed as an apparent monochrome picture. This facilitates chroma and phase adjustments and observation of VTR noise.
R, G, and B: Turn the button on to turn the R (red), G (green), and B (blue) beams off.
MONO APT COMB F1 F2 ADDRESS
16 : 9 SYNC BLUE ONLY R G B F3 F4 SAFE AREA
SAFF AREA (safe area): Turn the button on to display the safe area.
F3 and F4: These buttons are reserved for future use.

❹ Menu operation buttons


UP
MENU
DOWN
ENTER
MENU button: Press to display monitor menus.
UP and DOWN buttons: Press to select menu items and item settings.
ENTER button: Press to confirm selections and settings (the same function with the Ent button of the numeric keypad ❽).

For more information about using monitor menus, refer to the monitor's operation manual.

❺ POWER switch

Press to power the monitor on or off. If your system includes more than one monitor, you can use the ADDRESS menu to power all monitors on or off at once.

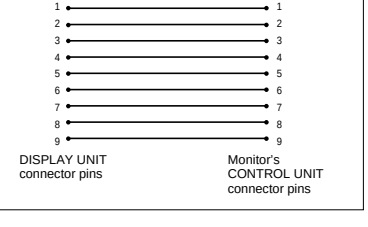
For information about the ADDRESS menu, refer to the monitor's operation manual.

❻ DEGAUSS button

Press to manually degauss the monitor CRT. When degaussing repeatedly, wait for 5 minutes before pressing the button again. (The monitor CRT is degaussed automatically each time the power is turned on.)

❼ DISPLAY UNIT connector (rear)

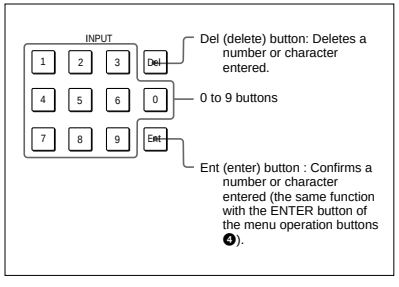
Connect to the CONTROL UNIT connector of a monitor designed for use with a separate control panel such as a BVM-20F1U/20F1E/14F1U/14F1E, using a straight cable with D-sub 9-pin plugs (not supplied) as shown in the figure below.



This connector is used to exchange control signals and to supply power from the monitor to the BKM-10R.

❽ Numeric keypad

Use the numeric keypad to enter menu settings and channel numbers for signals that you want to input to the monitor.



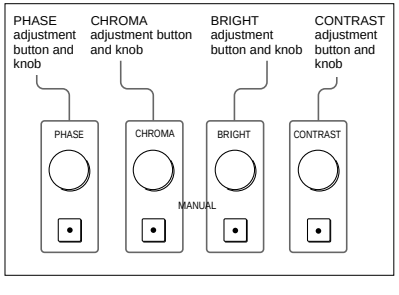
❾ MANUAL adjustment buttons and knobs

Each press of one of these buttons turns the button's green LED on or off. When the corresponding button is on (lit), you can rotate the knobs to adjust the picture's contrast, brightness (black level), chroma, and phase. These buttons are also used to enter adjustment values from the menus.
You can use the CONTROL PRESET ADJ menu to set preset values for each adjustment item.

For information about the CONTROL PRESET ADJ menu, refer to the monitor's operation manual.

Notes on using a SECAM, PAL D, component, and component digital system

- The phase of component signals cannot be adjusted.
- The phase and chroma of RGB signals cannot be adjusted.

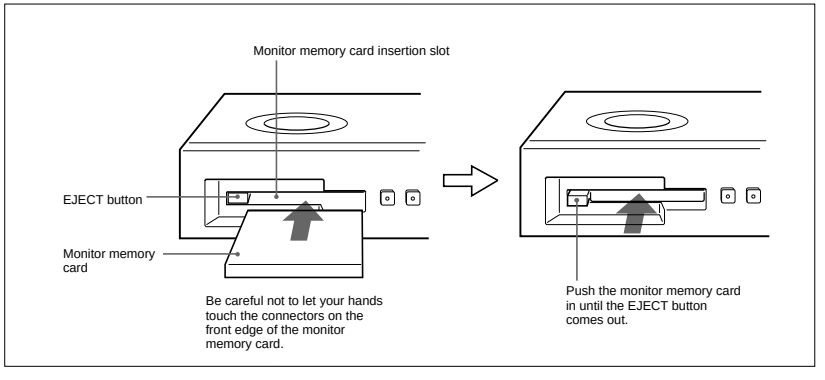


Inserting and Ejecting the Monitor Memory Card

Proceed as follows to insert and eject an optional BKM-12Y Monitor Memory Card.

For information about using data on the monitor memory card, refer to the monitor's operation manual.

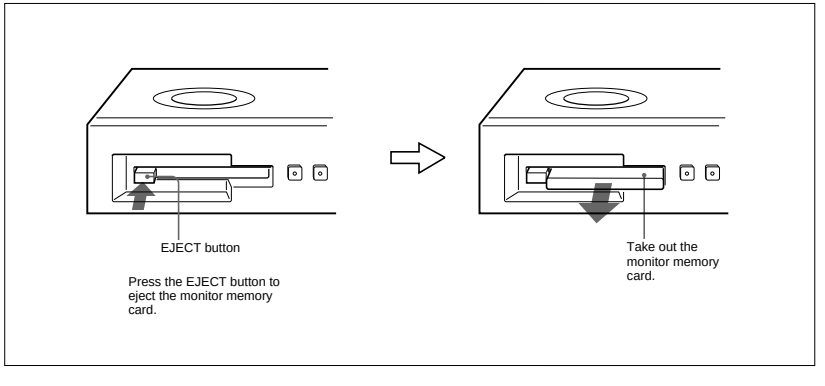
Inserting the monitor memory card


Monitor memory card insertion slot
EJECT button
Monitor memory card
Be careful not to let your hands touch the connectors on the front edge of the monitor memory card.
Push the monitor memory card in until the EJECT button comes out.

Ejecting the monitor memory card

Note

Do not eject the monitor memory card while data is being saved or loaded.



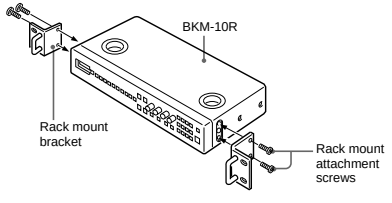
Mounting the Unit in a Rack

To mount the BKM-10R in an EIA standard 19-inch rack, an optional MB-510 Rack Mount Kit is required.

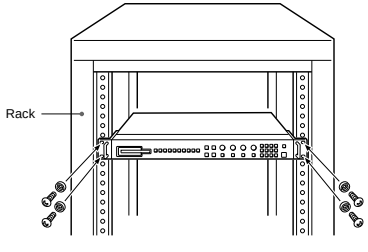
Proceed as follows to mount the unit in the rack.

1 Remove the four feet from the bottom of the BKM-10R.

2 Use the rack mount attachment screws supplied with the BKM-10R to attach the rack mount brackets of the optional MB-510 Rack Mount Kit to each side of this unit.



3 Screw the rack mount brackets to the rack to mount the BKM-10R in the rack. Use screws that match the size of the rack's screw holes.



Specifications

General

Power requirements	5 V DC (supplied from the connected monitor)
Power consumption	0.5 W 0.7 W max.
Maximum dimensions (w/h/d)	424 × 44 × 157 mm (16 3/4 × 1 3/4 × 6 1/4 inches)
Mass	1.4 kg (3 lb 1 oz)
Operating temperature	0˚C to 40˚C (32˚F to 104˚F)
Recommended working temperature	20˚C to 30˚C (68˚F to 86˚F)
Operating humidity	0% to 90% (no condensation)

Control connectors

DISPLAY UNIT	D-sub 9-pin, × 1

Accessories supplied

Rack mount attachment screws (4)
Operation Manual (1)

Accessories not supplied

BKM-12Y Monitor Memory Card
MB-510 Rack Mount Kit

Related equipment

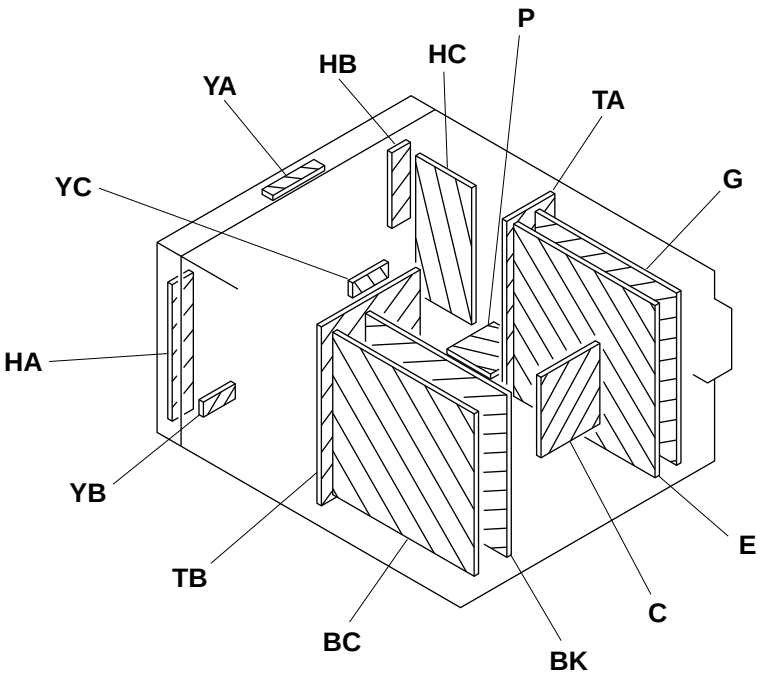
BVM-20F1U/20F1E/14F1U/14F1E Color Video Monitor

Design and specifications are subject to change without notice.

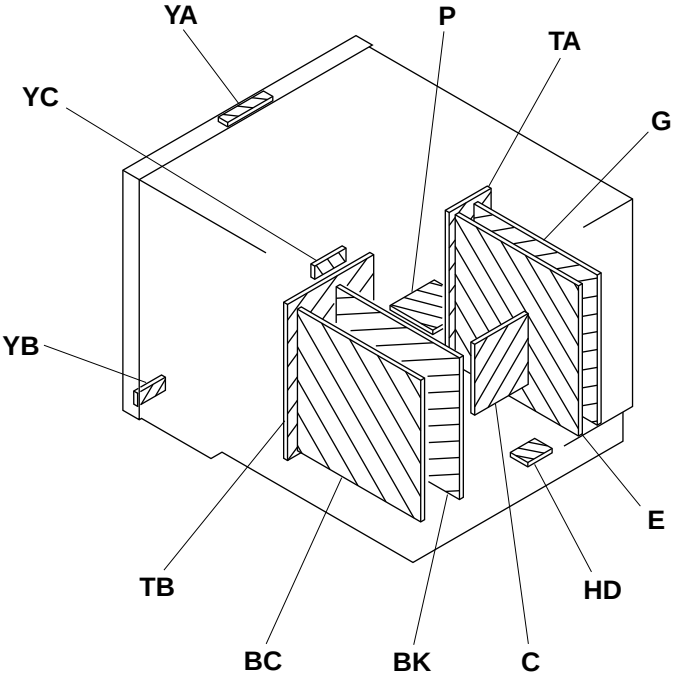
SECTION 2
SERVICE INFORMATIONS

2-1. CIRCUIT BOARDS LOCATION

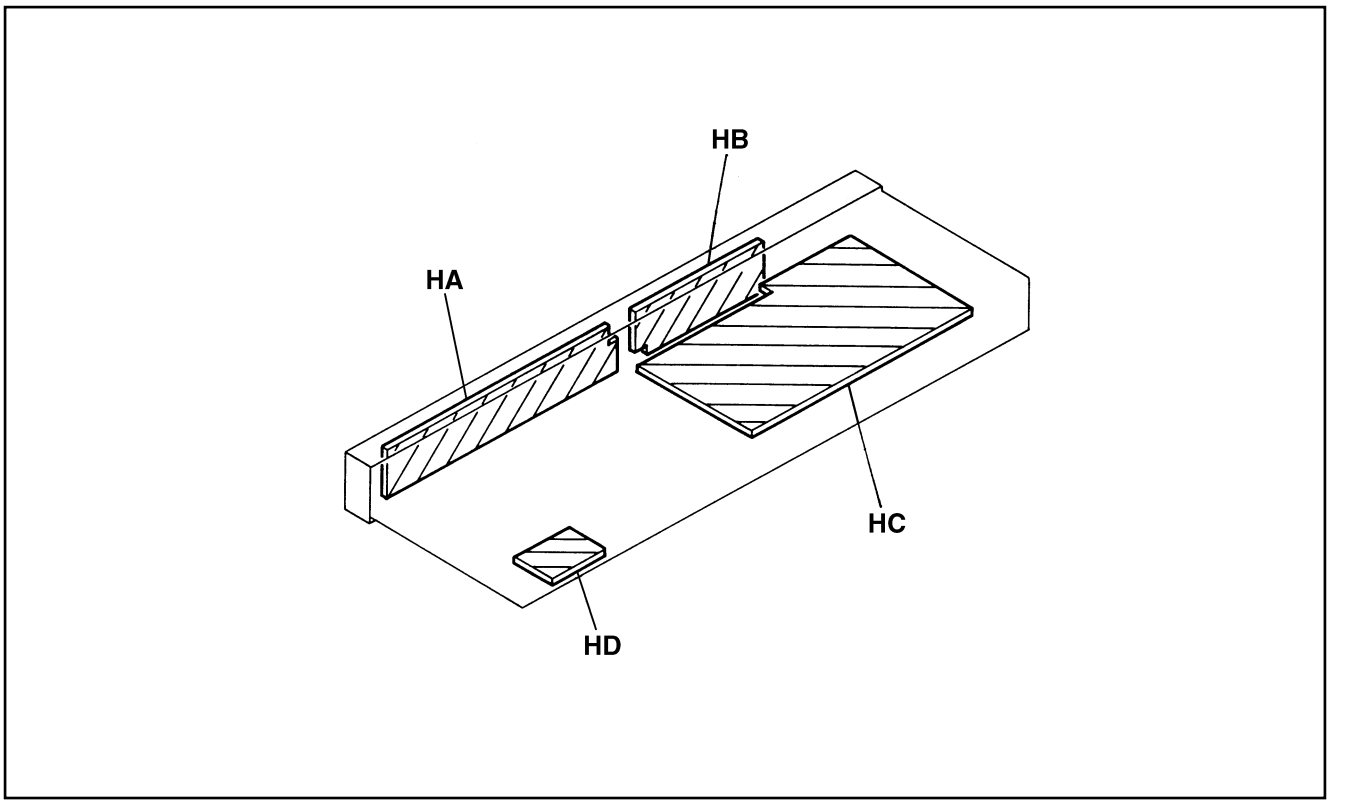
2-1-1. BVM-14G5A/14G5E/14G5U



2-1-2. BVM-14G1A/14G1E/14G1U/20G1A/20G1E/20G1U

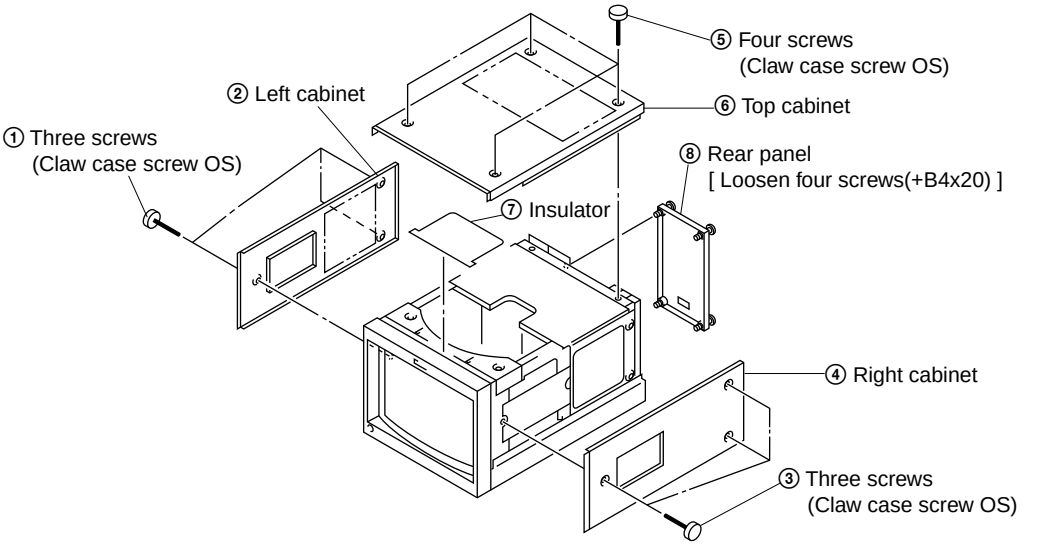


2-1-3. BKM-10R

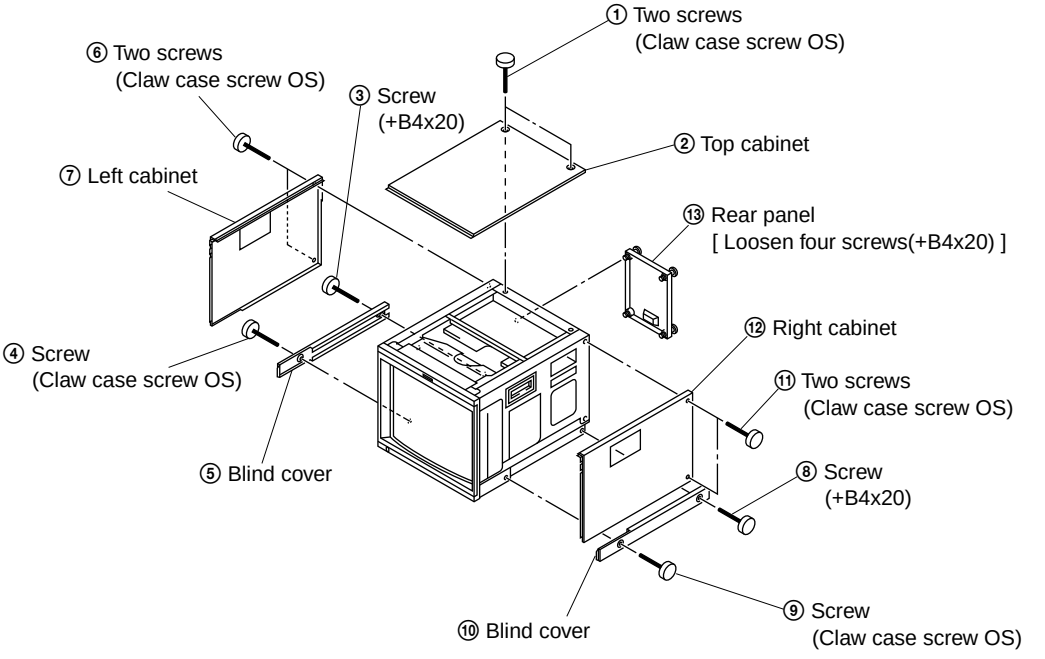


2-2. DISASSEMBLY

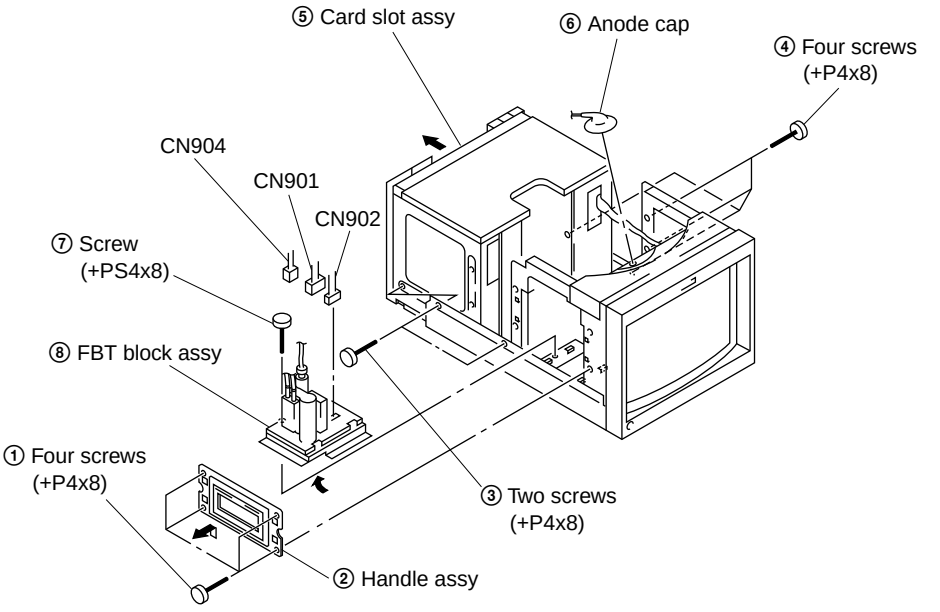
2-2-1-1. CABINET REMOVAL (14G1A/14G1E/14G1U/14G5A/14G5E/14G5U)



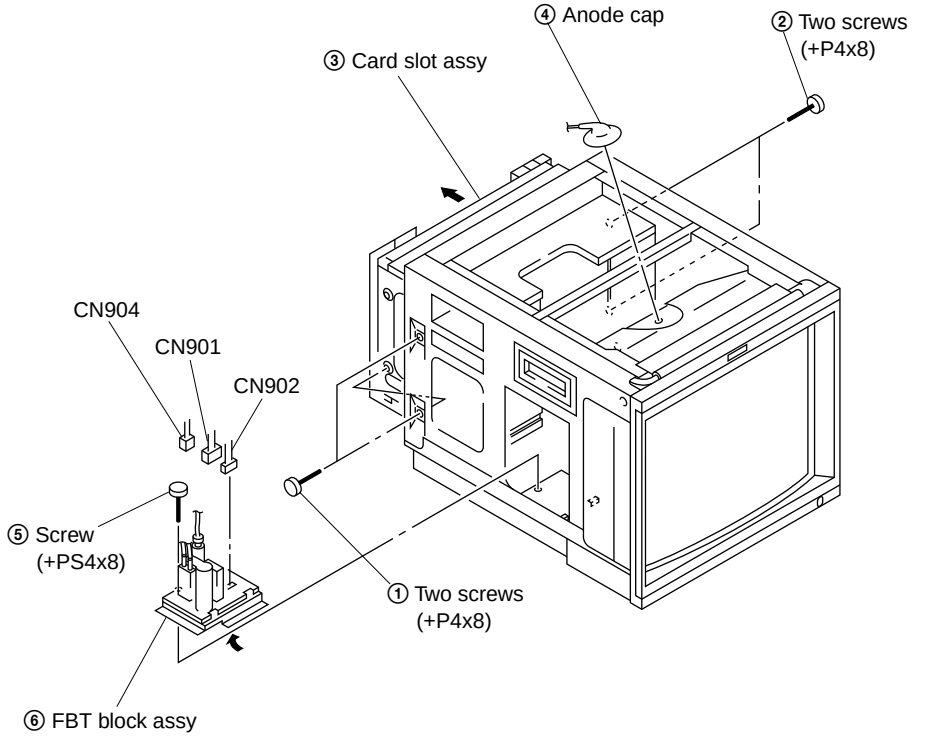
2-2-1-2. CABINET REMOVAL (20G1A/20G1E/20G1U)



2-2-2-1. FBT BLOCK ASSY REMOVAL (14G1A/14G1E/14G1U/14G5A/14G5E/14G5U)

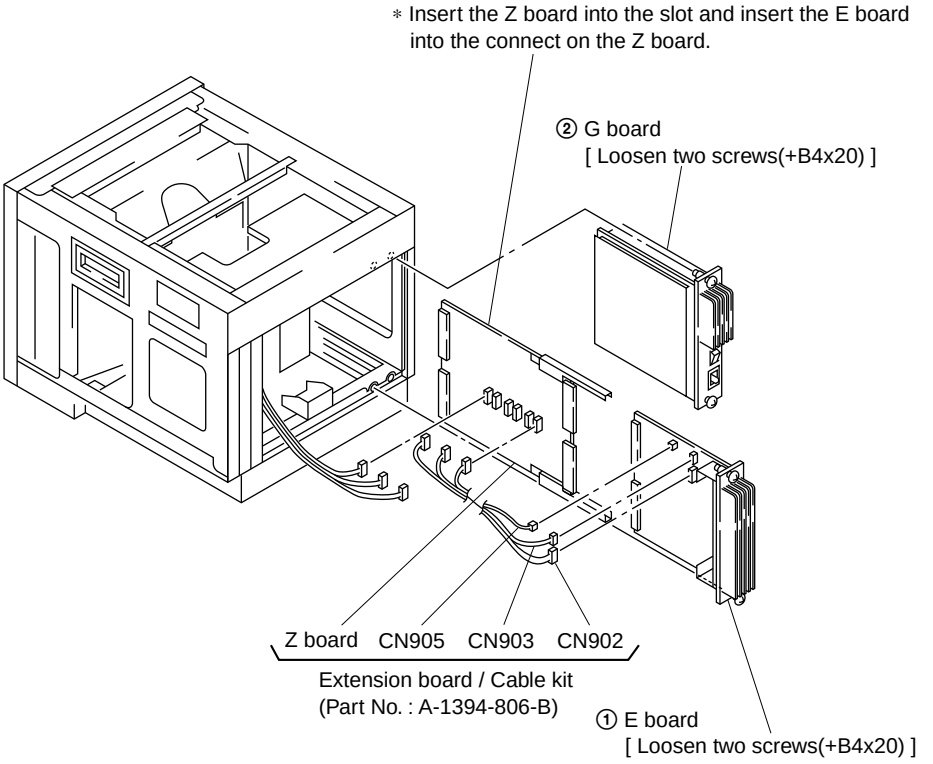


2-2-2-2. FBT BLOCK ASSY REMOVAL (20G1A/20G1E/20G1U)



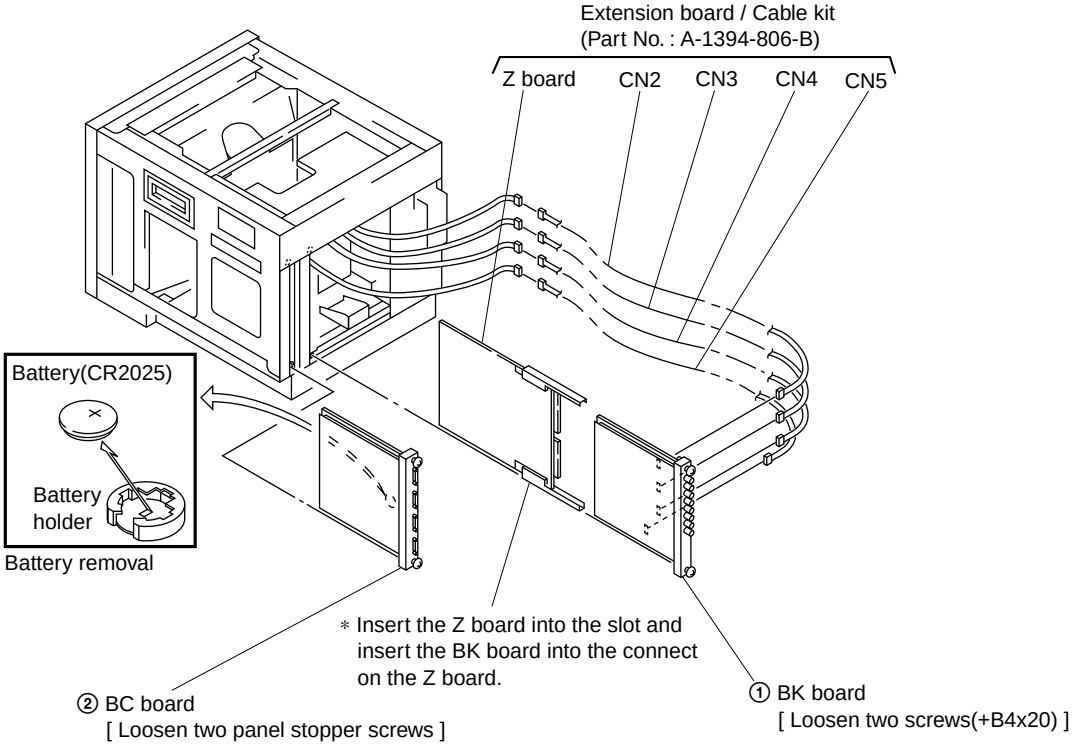
2-2-3. E AND G BOARDS REMOVAL AND CHECK

Note: The G board can be checked in the same way of the E board.

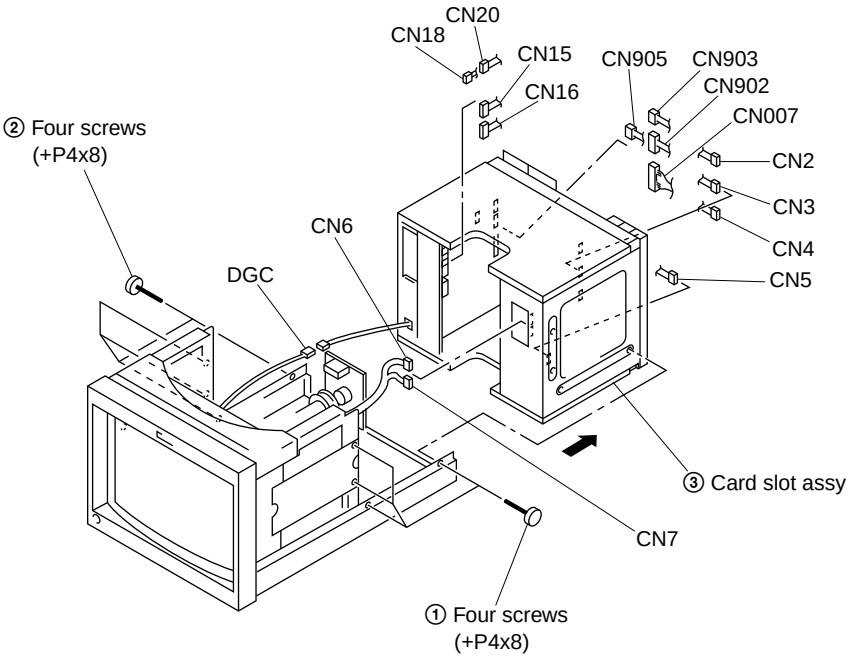

* Insert the Z board into the slot and insert the E board into the connect on the Z board.
② G board
[Loosen two screws(+B4x20)]
Z board
CN905
CN903
CN902
Extension board / Cable kit
(Part No. : A-1394-806-B)
① E board
[Loosen two screws(+B4x20)]

2-2-4. BC AND BK BOARDS REMOVAL AND CHECK

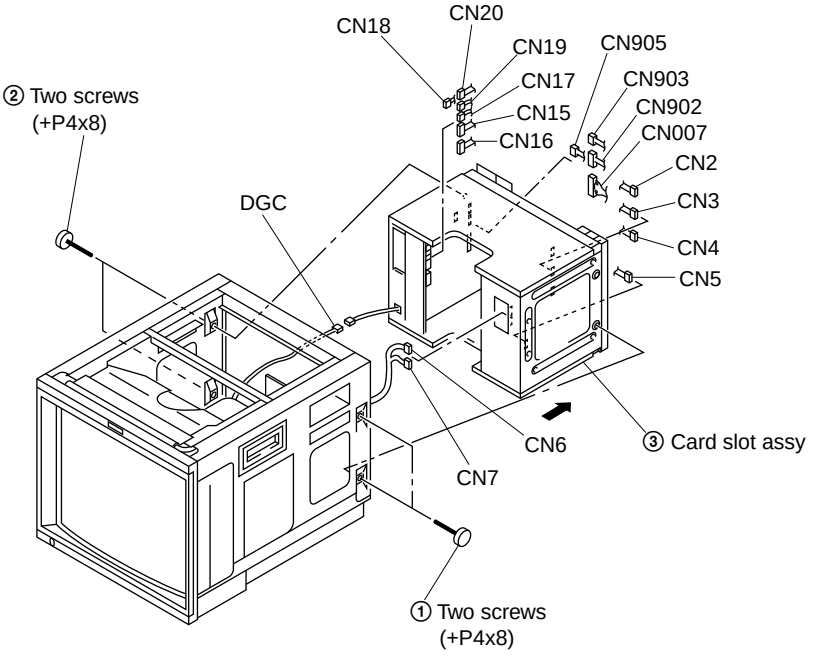
Note: The BC board can be checked in the same way of the BK board.



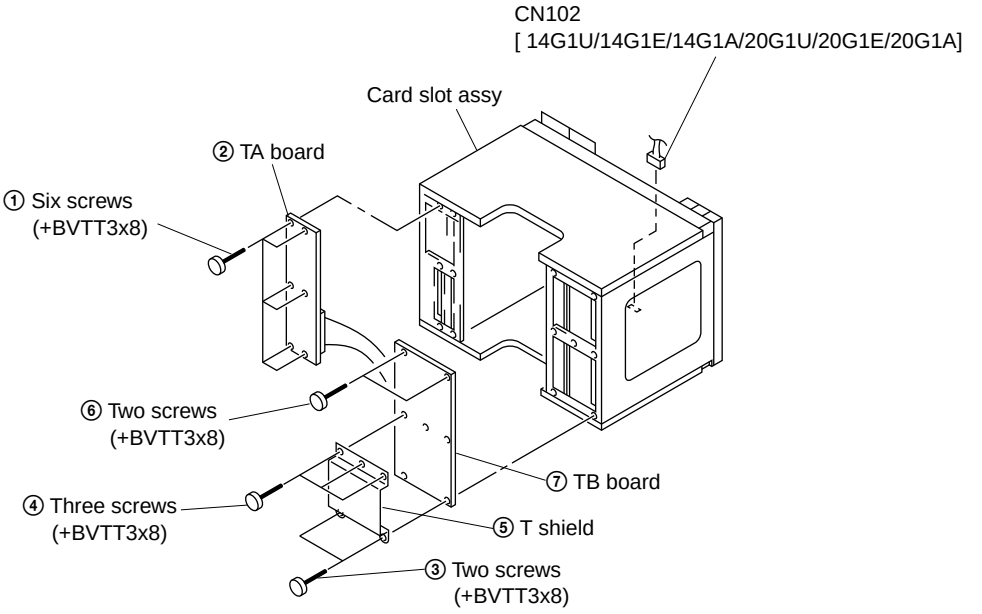
2-2-5-1. CARD SLOT ASSY REMOVAL (14G1A/14G1E/14G1U/14G5A/14G5E/14G5U)



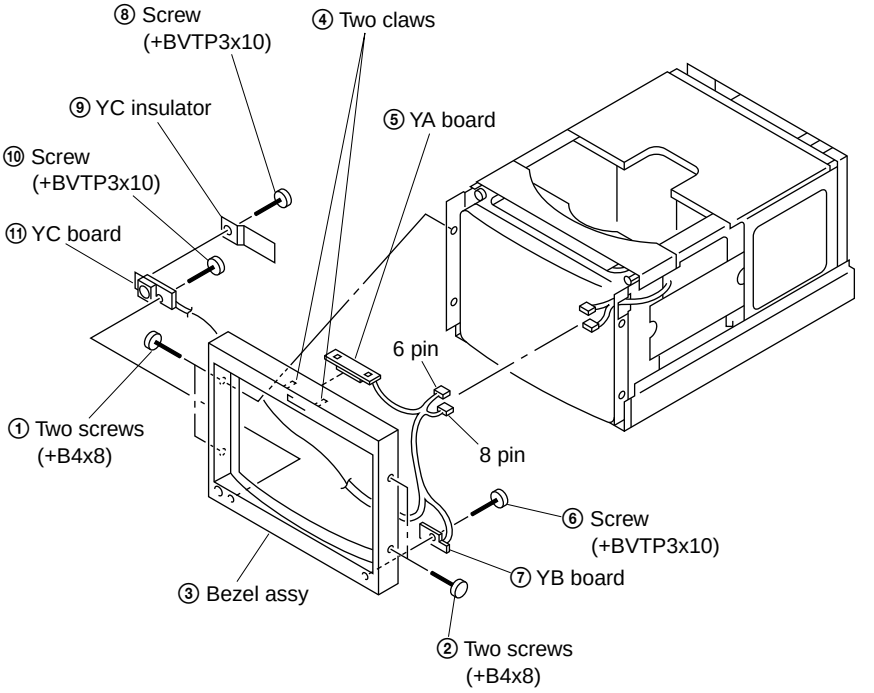
2-2-5-2. CARD SLOT ASSY REMOVAL (20G1A/20G1E/20G1U)



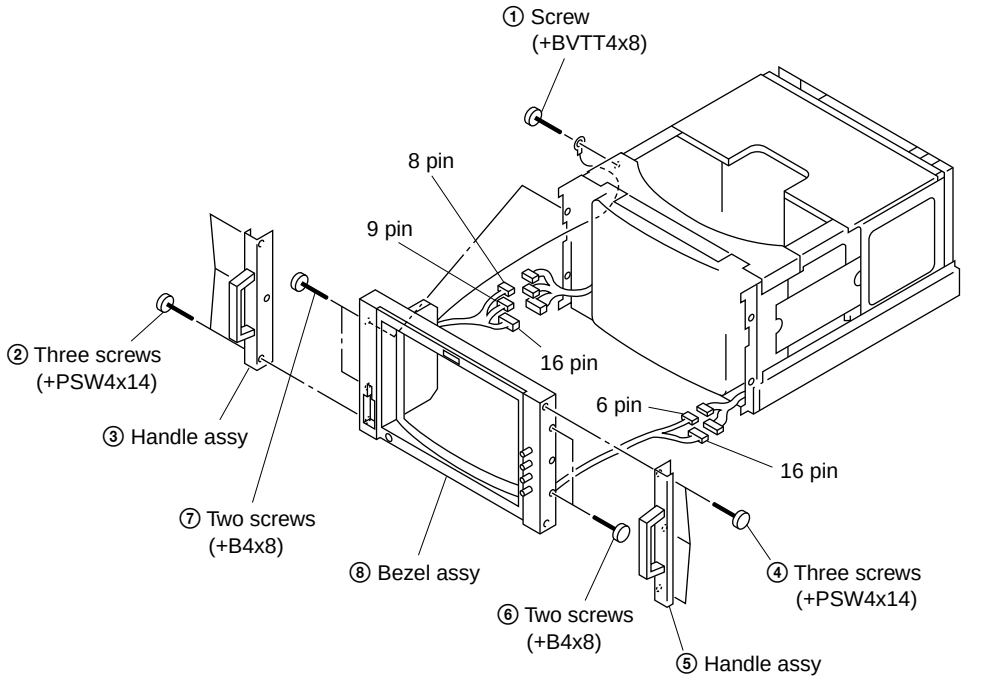
2-2-6. TA AND TB BOARDS REMOVAL



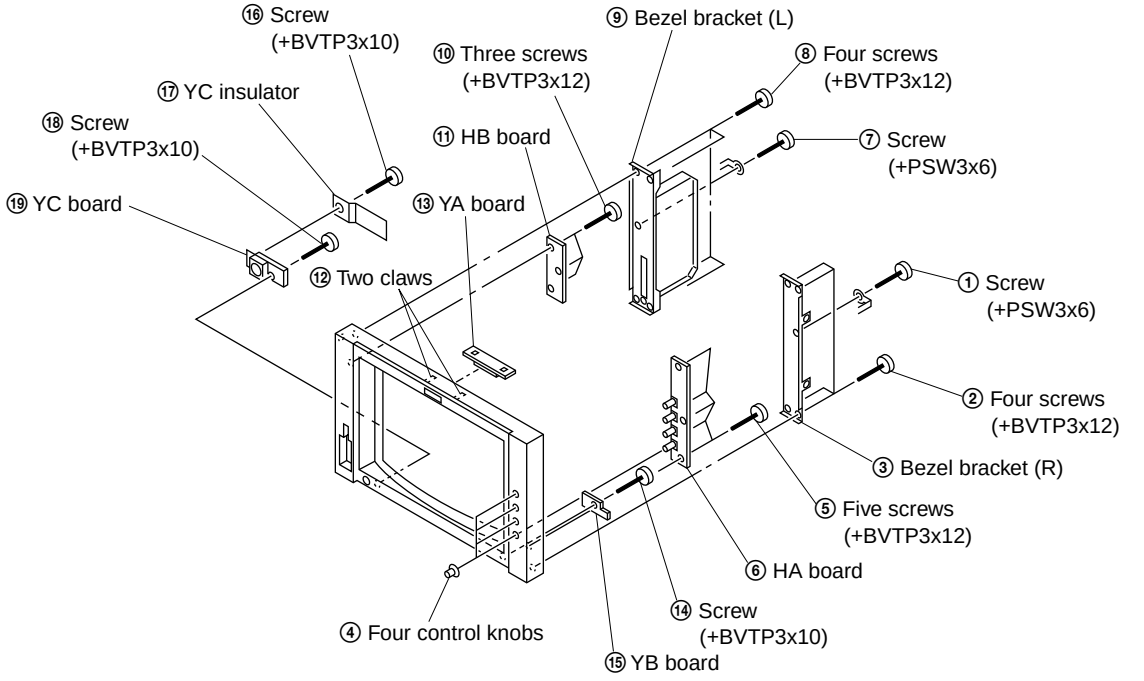
2-2-7-1. YA, YB AND YC BOARDS REMOVAL (14G1A/14G1E/14G1U)



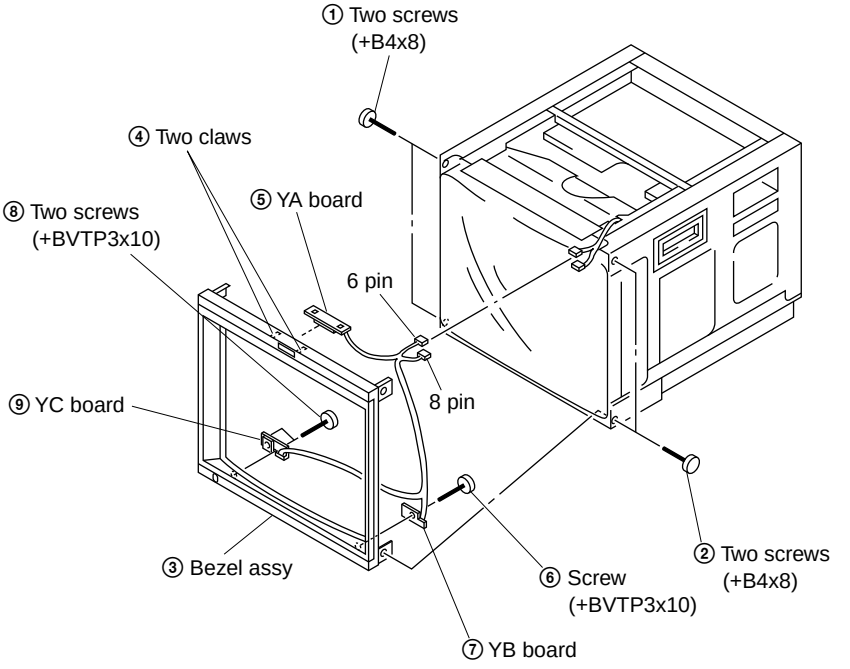
2-2-7-1-1. BEZEL ASSY REMOVAL (14G5A/14G5E/14G5U)



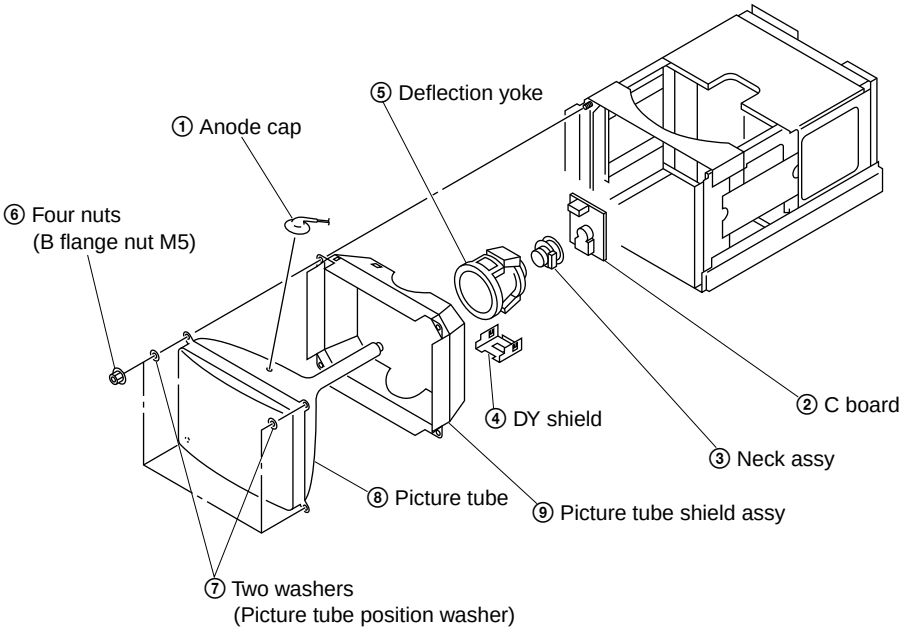
2-2-7-1-2. HA, HB, YA, YB AND YC BOARDS REMOVAL (14G5A/14G5E/14G5U)



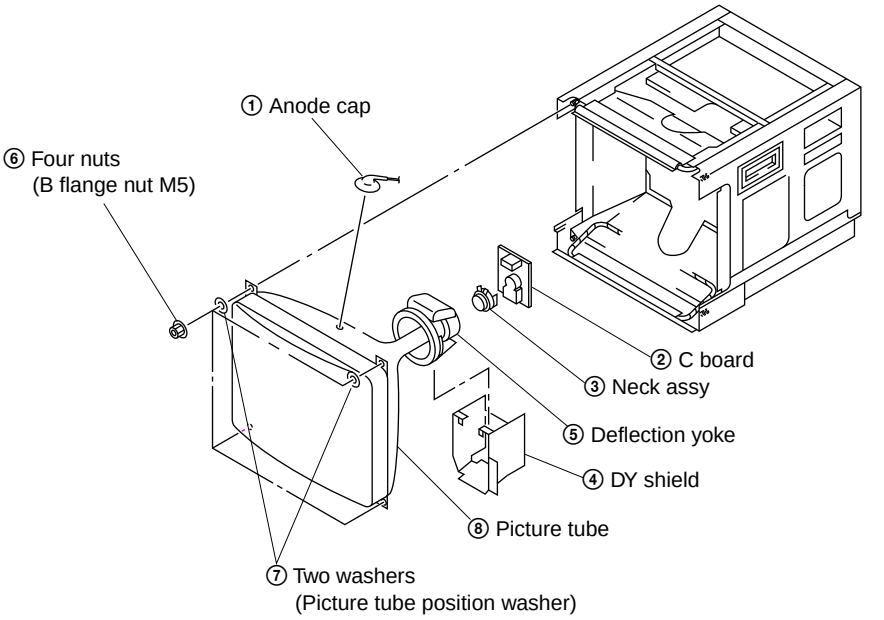
2-2-7-2. YA, YB AND YC BOARDS REMOVAL (20G1A/20G1E/20G1U)



2-2-8-1. PICTURE TUBE REMOVAL (14G1A/14G1E/14G1U/14G5A/14G5E/14G5U)



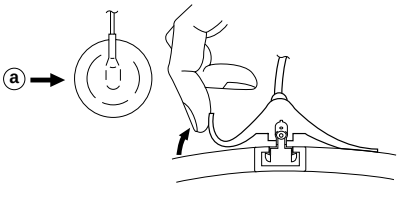
2-2-8-2. PICTURE TUBE REMOVAL (20G1A/20G1E/20G1U)



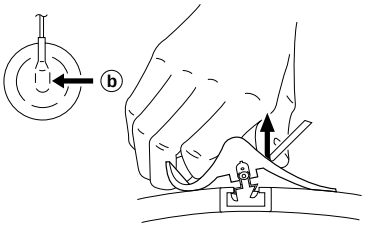
• REMOVAL OF ANODE-CAP

NOTE: Short circuit the anode of the picture tube and the anode cap to the metal chassis, picture tube shield or carbon painted on the picture tube, after removing the anode.

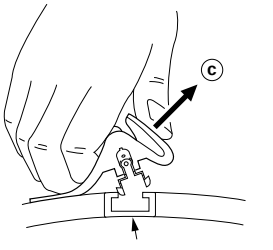
• REMOVING PROCEDURES



1. Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ .



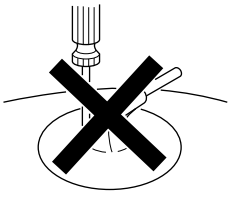
2. Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ .

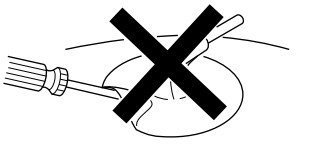


3. When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ⓒ .

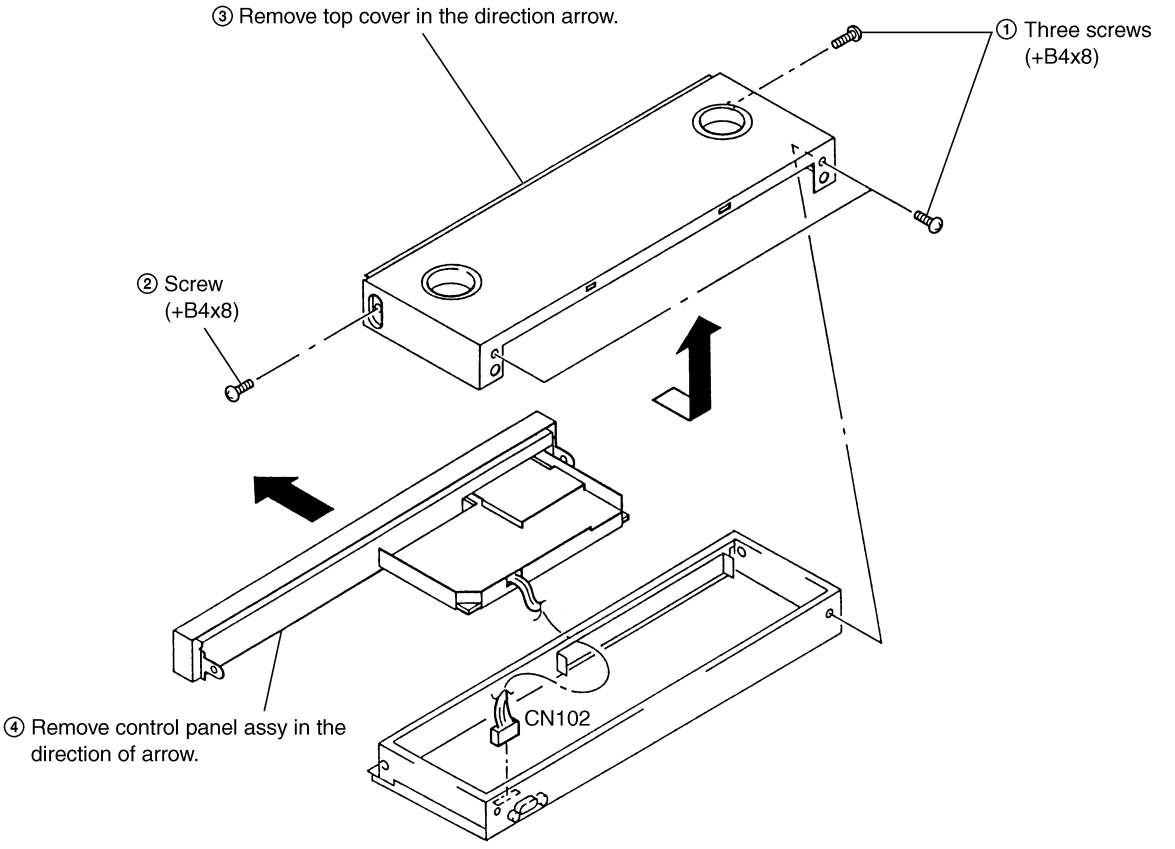
• HOW TO HANDLE AN ANODE-CAP

1. Don't hurt the surface of anode-caps with sharp shaped material!
2. Don't press the rubber hardly not to hurt inside of anode-caps!
   A material fitting called as shatter-hook terminal is built in the rubber.
3. Don't turn the foot of rubber over hardly!
   The shatter-hook terminal will stick out or hurt the rubber.

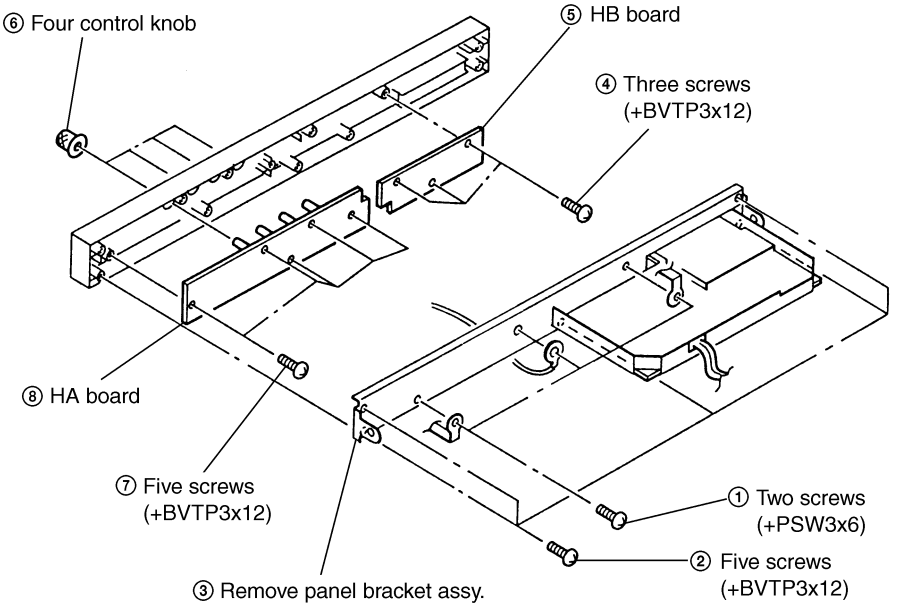




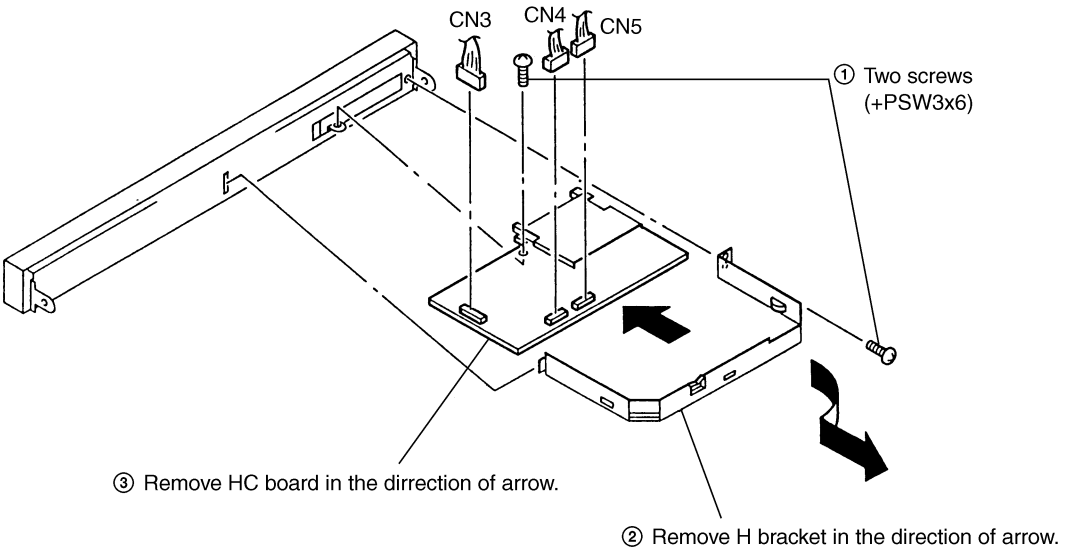
2-2-9. UPPER COVER REMOVAL (BKM-10R)



2-2-10. HA AND HB BOARD REMOVAL (BKM-10R)



2-2-11. HC BOARD REMOVAL (BKM-10R)



SECTION 3
SET-UP ADJUSTMENTS

Perform the following adjustments when replacing the CRT.

3-1. Preparations

[Required Tools and Measuring Instruments]

1. Signal generator
2. Oscilloscope
3. Color analyzer (MINOLTA CA-100)
4. Following specified cables for connecting RS-232C pin of CA-100 and OPTION pin of monitor.

BVM Option connector side — Mini DIN 8pin

H SYNC	1
V SYNC	2
RTS	3
GND	4
NC	5
TXD	6
+5V	7
RXD	8

CA-100 RS-232C connector side — D Sub 25pin

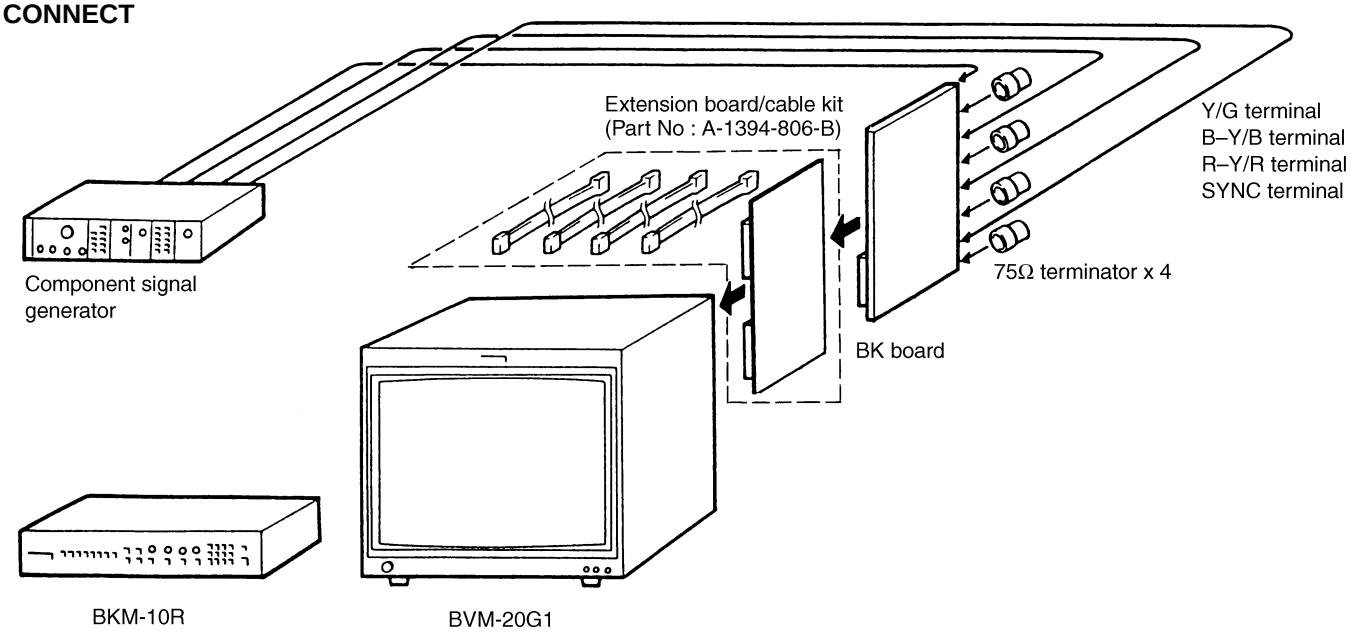
1	FG
2	TXD
3	RXD
4	RTS
5	CTS
6	NC
7	GND
8	NC
9 to 19	NC
20	DTR
21 to 25	NC

[Setting of INPUT CONFIGURATION Menu]

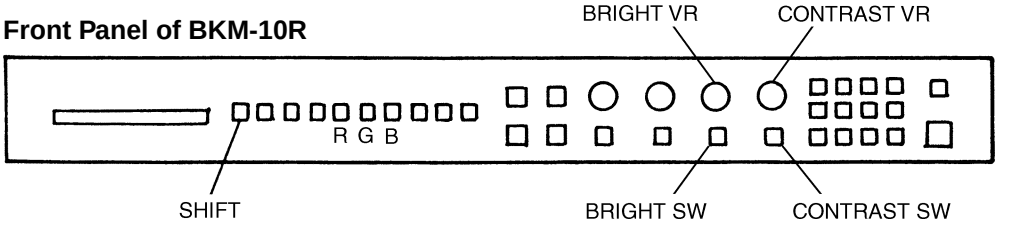
Unless specified otherwise, set the INPUT CONFIGURATION menu of the SETUP menu as follows.

FORMAT ..... COMPONENT YUV
SMPTE/EBU N-10
SLOT NO 6
INPUT NO 1
SYNC MODE ..... INT
SCREEN MODE ..... 4:3 NORM
SAFE AREA ..... OFF
CHANNEL NAME ..... PROG
COLOR TEMP ..... STD
H PHASE 000

• **CONNECT**



Front Panel of BKM-10R



3-2. Focus Adjustment

1. Input the dot signal or cross hatch signal.
2. Set the following DF adjustment data to the center value (128).
   DF T&B
   DF SIDE
   DF CORNER
   Note: The above adjustment menu is under the E BOARD menu of the MAINTENANCE menu.
3. Adjust the center of the screen to the optimum focus using the FOCUS 1 VR (vertical focus adjustment) and FOCUS 2 VR (horizontal focus adjustment).
4. Input the cross hatch signal.
5. Adjust the following DF adjustment data so that the cross hatch lines at the ends of the screen become the same thickness as those at the center of the screen.
   DF T&B
   DF SIDE
   DF CORNER (fixed at value)
6. Adjust the DF data in the same way in the following modes.
   4:3 UNDERSCAN mode
   16:9 NORMAL SCAN mode
   16:9 UNDER SCAN mode

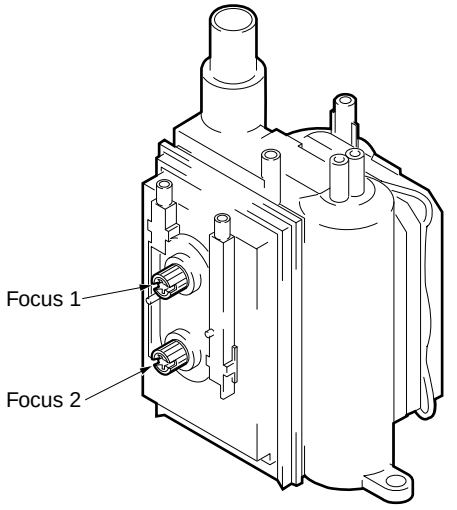
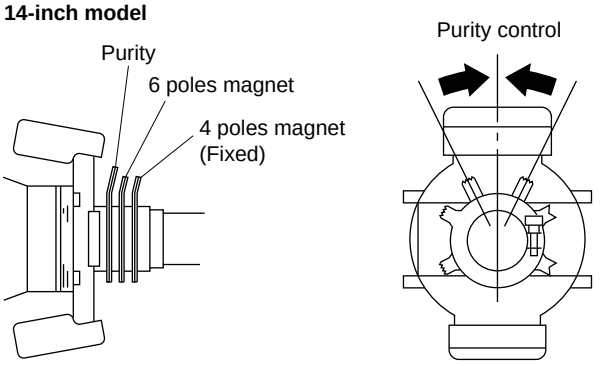


Fig. 1-1

3-3. Landing Adjustment

1. Input the white signal.
2. Press the BRIGHTNESS VR and CONTRAST VR buttons to the preset condition. [The LEDs (green) on the buttons go off.]
3. Face the CRT screen towards the east (west) and press the DEGAUSS button.
4. Set the Purity knob to the mechanical center.

14-inch model



20-inch model

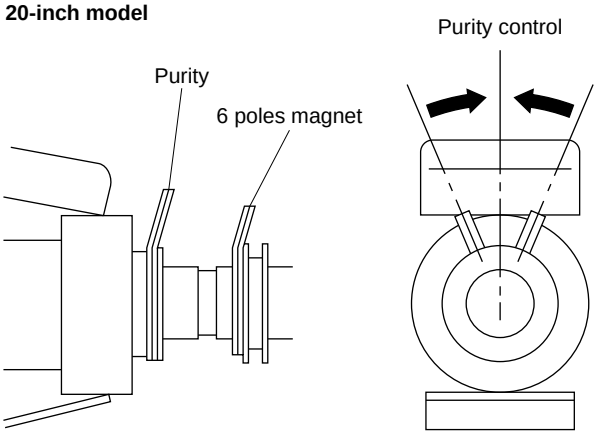


Fig. 1-2

5. Push the DY (deflection york) to the front as much as possible.
6. Secure the neck assembly in the position shown in Fig. 1-3.

20-inch model **14-inch model**

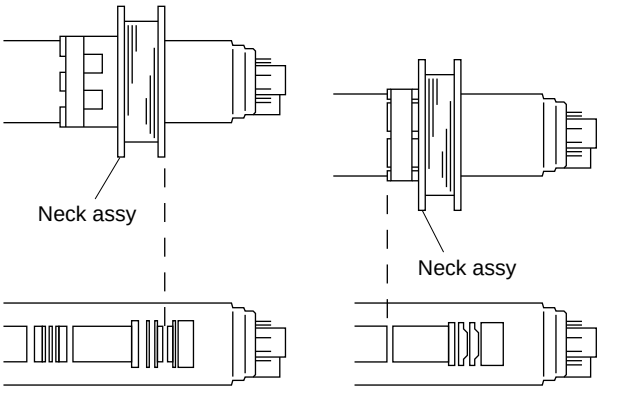


Fig. 1-3

7. Set the color of the screen to green only (Turn on the SHIFT button (LED lights up in orange), and turn on the R button or B button (LED lights up (on the BKM-10R).)
8. Rotate the Purity knob, and adjust so that the green comes to the center of the screen as shown in Fig. 1-4.

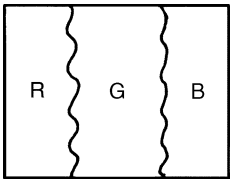


Fig. 1-4

9. Move DY backwards, and adjust so that the color of the whole screen becomes green only.
10. Adjust the tilt of DY at cross hatch signal and tighten the screw of DY.
11. Secure the deflection york with four (20 Inch), three (14 Inch) spacers.

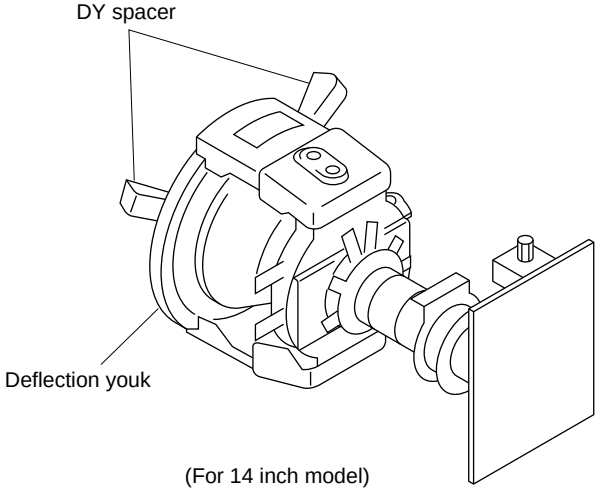


Fig. 1-5

- **Final check**

After adjusting, check that there is no mislanding when the unit is faced in all four directions, north, south, east, west.

3-4. H Blanking Adjustment

- **Preparations**

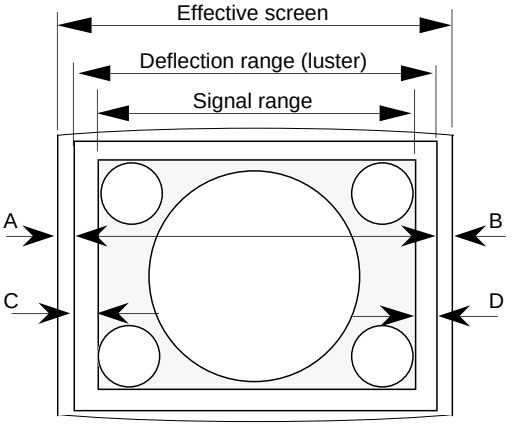
1. Connect the signal generator and input the digital monoscope signal.
2. Increase BRIGHT until the blanking can be seen.

Note: The following adjustment menus are under the E BOARD menu of the MAINTENANCE menu.

H CENTER
H PHASE
H BLK PHASE
H BLK WIDTH
H SIZE

- **4:3 NORMAL SCAN Mode**

1. Set the SCREEN MODE to 4:3 NORM at the INPUT CONFIGURATION menu of the SETUP menu.
2. Decrease the H SIZE so that the whole left and right edges of the luster can be seen.
   Write down the original H SIZE data.
3. Maximize (255) the H BLK PHASE data and Minimam (000) the H BLK WIDHT data.
4. Adjust the H CENTER data so that the luster comes to the center of the screen (so that A ≒ B).
   Write down the H CENTER data.
5. Adjust the H PHASE data so that the monoscope screen comes to the center of the luster (so that C ≒ D).
   Write down the H PHASE data.



H CENTER: A ≒ B
H PHASE: C ≒ D

Fig. 1-6

6. Adjust the H BLK PHASE data and adjust so that H Blanking is 0.25 frame outside the right edge of the monoscope signal area. (Fig. 1-7)
   Write down the H BLK PHASE data.
7. Adjust the H BLK WIDTH data and adjust so that H Blanking is 0.25 frame out side the left edge of the monoscope signal erea. (Fig. 1-7)
   Write down the H BLK WIDTH data.
8. Set the original H SIZE data.

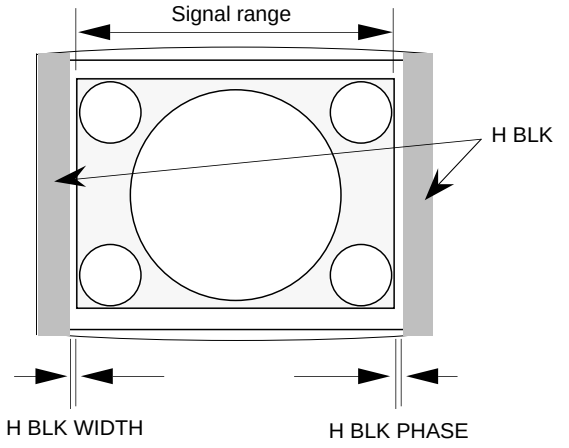


Fig. 1-7

• 4:3 UNDER SCAN Mode

1. Set the SCREEN MODE to 4:3 UNDR at the INPUT CONFIGURATION menu of the SETUP menu.
2. Set the H CENTER data to the same value as the 4:3 NORMAL SCAN mode.
3. Set the H PHASE data to the same value as the 4:3 NORMAL SCAN mode.
4. Adjust the H BLK PHASE data until the blanking at the right side of the screen just disappears outside the effective screen.
5. Set the H BLK PHASE data to +30.
   Write down the H BLK PHASE data.
6. Adjust the H BLK WIDTH data until the blanking at the left side of the screen just disappears outside the effective screen.
7. Set the H BLK WIDTH data to +30.
   Write down the H BLK WIDTH data.

• 16:9 NORMAL SCAN Mode

1. Set the SCREEN MODE to 16:9 NORM at the INPUT CONFIGURATION menu of the SETUP menu.
2. Set the H CENTER data to the same value as the 4:3 NORMAL SCAN mode.
3. Set the H PHASE data to the same value as the 4:3 NORMAL SCAN mode.
4. Set the H BLK PHASE data to the same value as the 4:3 NORMAL SCAN mode.
5. Set the H BLK WIDTH data to the same value as the 4:3 NORMAL SCAN mode.

• 16:9 UNDER SCAN Mode

1. Set the SCREEN MODE to 16:9 UNDR at the INPUT CONFIGURATION menu of the SETUP menu.
2. Set the H CENTER data to the same value as the 4:3 UNDR SCAN mode.
3. Set the H PHASE data to the same value as the 4:3 UNDR SCAN mode.
4. Set the H BLK PHASE data to the same value as the 4:3 UNDER SCAN mode.
5. Set the H BLK WIDTH data to the same value as the 4:3 UNDER SCAN mode.

3-5. V Blanking Adjustment

• Preparations

1. Connect the signal generator and input the monoscope signal.
2. Increase BRIGHT until the blanking can be seen.

   Note: The following adjustment menus are under the E BOARD menu of the MAINTENANCE menu.

   V BLK TOP
   V BLK BOT
   V BLK

• 4:3 NORMAL SCAN Mode

1. Set the SCREEN MODE to 4:3 NORM at the INPUT CONFIGURATION menu of the SETUP menu.
2. Adjust the V BLK TOP data until the blanking at the top of the screen just disappears outside the effective screen.
3. Set the V BLK TOP data to +30.
   Write down the V BLK TOP data.
4. Adjust the V BLK BOTTOM data until the blanking at the bottom of the screen just disappears outside the effective screen.
5. Set the V BLK BOTTOM data to –30.
   Write dwon the V BLK BOTTOM data.
6. Set the V BLK data to fixed at value (128).

• 4:3 UNDER SCAN Mode

1. Set the SCREEN MODE to 4:3 UNDR at the INPUT CONFIGURATION menu of the SETUP menu.
2. Set the V BLK TOP data to 255.
3. Set the V BLK BOTTOM data to 000.
4. Set the V BLK data to fixed at value (128).

• 16:9 NORMAL SCAN Mode

1. Set the SCREEN MODE to 16:9 NORM at the INPUT CONFIGURATION menu of the SETUP menu.
2. Set the V BLK TOP data to 255.
3. Set the V BLK BOTTOM data to 000.
4. Set the V BLK data to fixed at value (128).

• 16:9 UNDER SCAN Mode

1. Set the SCREEN MODE to 16:9 UNDR at the INPUT CONFIGURATION menu of the SETUP menu.
2. Set the V BLK TOP data to 255.
3. Set the V BLK BOTTOM data to 000.
4. Set the V BLK data to fixed at value (128).

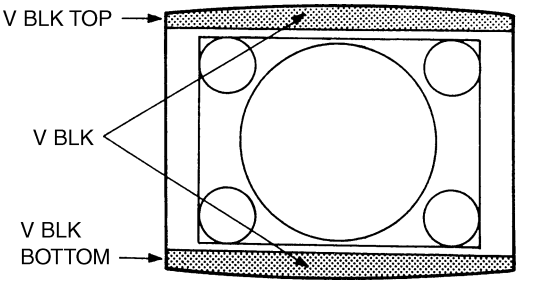


Fig. 1-8

3-6. Linearity Adjustment

Note: The following adjustment menus are under the E BOARD menu of the MAINTENANCE menu.

H PHASE
V CENTER
V SIZE
V LIN BALANCE
V LIN AMP
H SIZE
H LIN BALANCE
H LIN AMP
H KEY BAL
H KEY
H PIN BAL
H PIN
H CENTER BOW
H MID PIN
H U COR PIN
H L COR PIN

1. Input the cross hatch signal.
2. Check that the image is not tilting, and there is no top and bottom V PIN distortion nor horizontal trapezoid distortion.
   Tilt: Adjust the DY tilt.
   Top/bottom V PIN distortion: Adjust the top and bottom DY head swing
   Horizontal trapezoid distortion: Adjust using the DY TLV VR (take note that the convergence may be disrupted.)
3. Input the monoscope signal.
4. Set the SCREEN MODE to 4:3 NORM at the INPUT CONFIGURATION menu.
5. Adjust the H PHASE data, and adjust the horizontal center of the image.
6. Adjust the vertical center of the image.
7. Input the cross hatch signal.
8. Adjust the V SIZE, V LIN BALANCE, and V LIN AMP data as shown in Fig. 1-9.
9. Adjust the H SIZE, H LIN BALANCE, and H PIN AMP data as shown in Fig. 1-10.

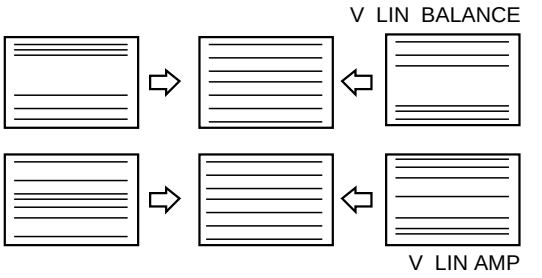


Fig. 1-9

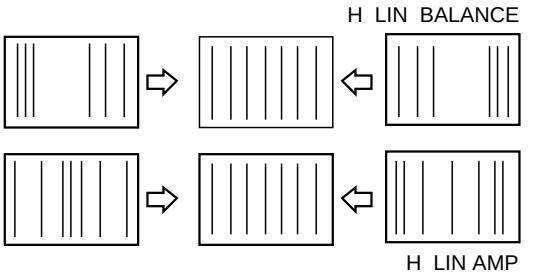


Fig. 1-10

10. Adjust the H KEY BAL, H KEY, H PIN BAL, and H PIN data so that there is no side trapezoid distortion and PIN distortion as shown in Fig. 1-11.
11. Adjust the H U COR PIN and H L COR PIN data as shown in Fig. 1-12.
12. Check the H CENTER BOW and H MID PIN is very bad should it be adjusted.
13. Repeat the above adjustment to optimize the horizontal and vertical linearity.
14. Adjust in the same way in the following modes.
    4:3 UNDER SCAN mode
    16:0 NORMAL SCAN mode
    16:9 UNDER SCAN mode

- **Common adjusting items for modes**
  H CENT, H PHASE, H LIN BALANCE, H LIN AMP, H SEZE, ROTATION, ROTATION 2.
  4:3 NORM → 16:9 NORM
  4:3 UNDR → 16:9 UNDR
) Copy the data

- **Adjusting items differing between modes**
  V SIZE, H PIN BAL, H PIN, H KEY BAL, H KEY, V LIN BALANCE, V LIN AMP

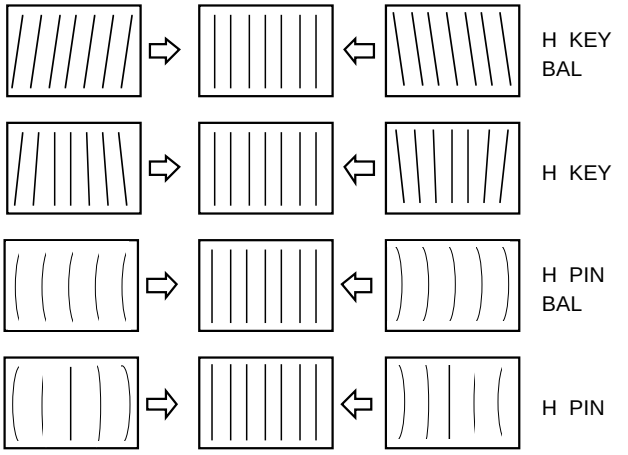


Fig. 1-11

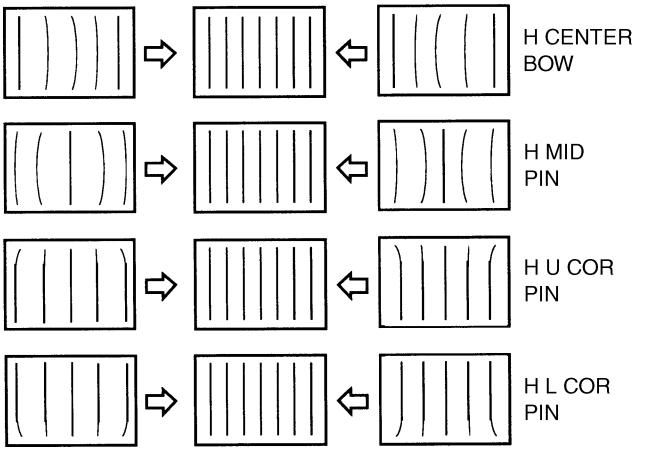


Fig. 1-12

3-7. Convergence Adjustment

- **Preparation**

1. Set the SCREEN MODE to 4:3 NORM at the INPUT CONFIGURATION menu.
2. Input the cross hatch signal.
3. Check that the H STATIC CONV data is the center value (128).
   Note: The H STATIC CONV adjustment menu is under the E BOARD menu of the MAINTENANCE menu.
4. For the 14 inch model, set the 4-pole magnet of the DY to the OFFSET state. (See Fig. 1-2.)
5. For the 20 inch model, set the 6-pole magnet of the DY to the OFFSET state. (See Fig. 1-2.)

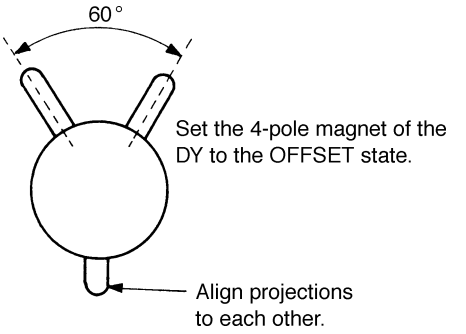


Fig. 1-13

3-7-1. Static Convergence Adjustment

• Horizontal Static Convergence

1. Adjust RV501 (H STAT) of the C board so that the red and green dots coincide in the horizontal direction at the screen center.
2. If the blue dot is out of convergence from the red and green dots:
   - For the 14-inch model:
     Perform HMC (horizontal misconvergence) correction using the 6-pole magnet of the DY (See Fig. 1-2.).
     (The 4-pole magnet of the DY is not used. Set to the OFFSET state.)
   - For the 20-inch model:
     Perform HMC (horizontal misconvergence) correction using the 6-pole magnet of the NTC (See Fig. 1-2.).

• Vertical Static Convergence

1. Adjust the V STATIC CONV data so that the red and green dots coincide in the vertical direction at the screen center.
   Note: The V STATIC CONV adjustment menu is under the E BOARD menu of the MAINTENANCE menu.
2. If the blue dot is out of convergence from the red and green dots:
   - For the 14-inch model:
     Perform VMC (vertical misconvergence) correction using the 6-pole magnet of the DY (See Fig. 1-2.).
     (The 4-pole magnet of the DY is not used. Set to the OFFSET state.)
   - For the 20-inch model:
     Perform VMC correction using the 6-pole magnet of the NTC (See Fig. 1-2.).

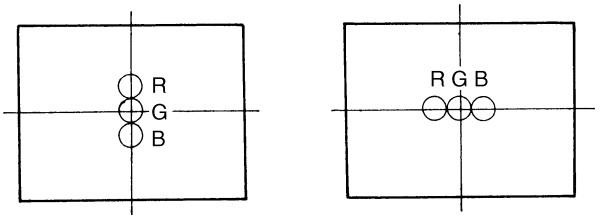


Fig. 1-14

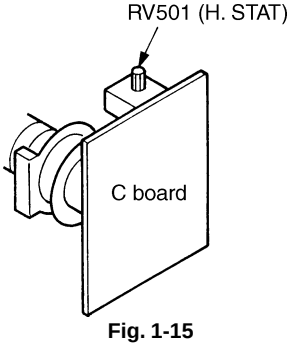
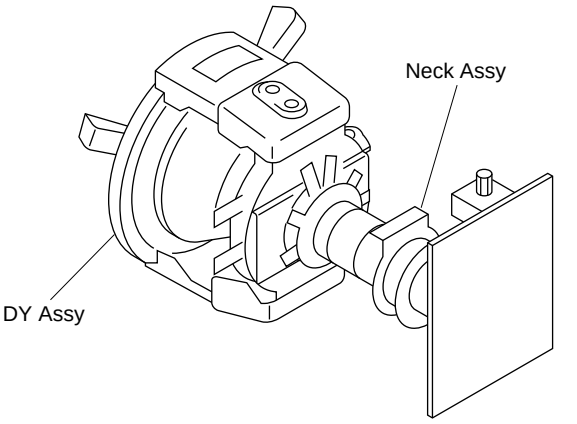


Fig. 1-15

14-inch model



20-inch model

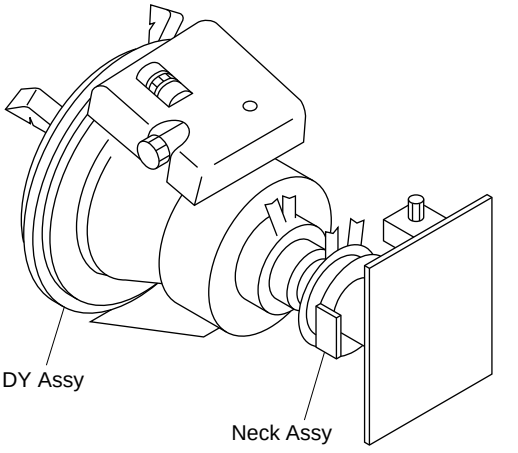


Fig. 1-16

• HMC and VMC correction with 6-pole magnet

1. HMC (horizontal misconvergence) correction of 6-pole magnet and movement of electron beam.

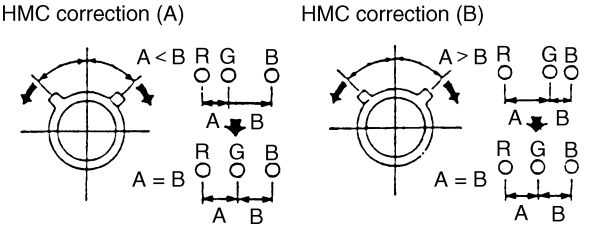


Fig. 1-17

2. VMC (vertical misconvergence) correction of 6-pole magnet and movement of electron beam.

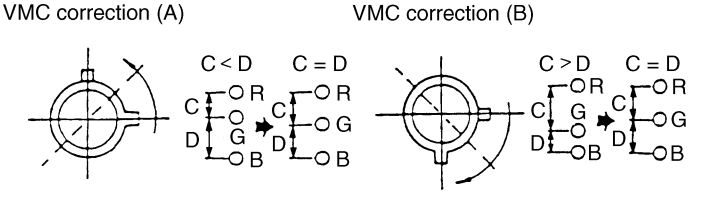


Fig. 1-18

3-7-2. 20-inch Model Convergence Adjustment

• 4:3 NORMAL SCAN mode

1. Set the SCREEN MODE to 4:3 NORM at the INPUT CONFIGURATION menu.
2. Input the cross hatch signal.

• Vertical Convergence Adjustment

1. Minimize the vertical misconvergence at the center of the left side of the screen and the center of the right side of the screen using the DY correction reactors XBV and XCV.
   * As TLV is used for adjusting the horizontal trapezoid distortion, only when MSV is very bad should it be adjusted while maintaining the balance with the horizontal trapezoid distortion.
2. Adjust the V STAT BOTTOM data and V STAT TOP data so that the vertical misconvergence at the top and bottom of the screen becomes minimum.
   Note: The V STAT BOTTOM and V STAT TOP adjustment menu is under the E BOARD menu of the MAINTENANCE menu.

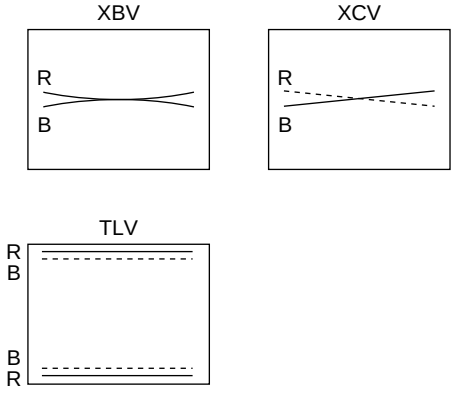


Fig. 1-19

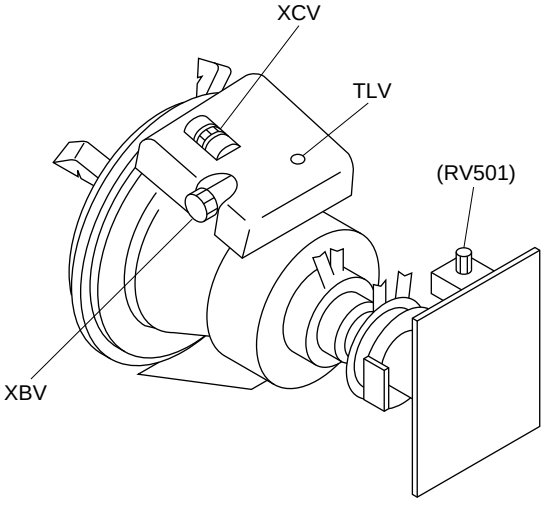


Fig. 1-20

• Horizontal Convergence Adjustment

1. Adjust the horizontal convergence adjustment data (H CONV data) in the following order so that the red, green, and blue dots coincide on the whole screen.
   (Do not change the value of the H STAT data and H STATIC CONV data (128).)
   Note1: The horizontal convergence adjustment menu is under the E BOARD menu of the MAINTENANCE menu.
   Note2: In anadjustable completely using a Permalloy correction board and fix with RTV.

1. H CONV C T
2. H CONV C B
3. H CV R C
4. H CV R T
5. H CV R B
6. H CV L C
7. H CV L T
8. H CV L B

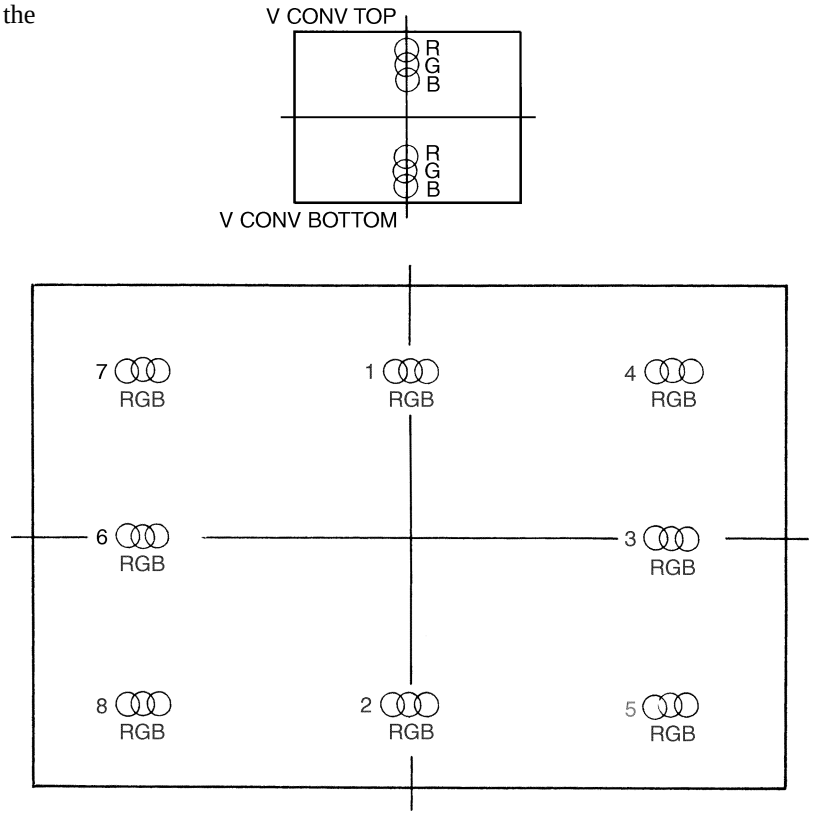


Fig. 1-21

• 4:3 UNDER SCAN Mode

1. Set the SCREEN MODE to 4:3 UNDR at the INPUT CONFIGURATION menu of the SETUP menu.
2. Set the vertical convergence adjustment data (V CONV data) and horizontal convergence adjustment data (H CONV data) to the same value as the 4:3 NORMAL SCAN mode.
3. Check the horizontal and vertical convergence, and if there is misconvergence, adjust again.

• 16:9 NORMAL SCAN Mode

1. Set the SCREEN MODE to 16:9 NORM at the INPUT CONFIGURATION menu of the SETUP menu.
2. Set the vertical convergence adjustment data (V CONV data) and horizontal convergence adjustment data (H CONV data) to the same value as the 4:3 NORMAL SCAN mode.
3. Check the horizontal and vertical convergence, and if there is misconvergence, adjust again.

• 16:9 UNDER SCAN Mode

1. Set the SCREEN MODE to 16:9 UNDR at the INPUT CONFIGURATION menu of the SETUP menu.
2. Set the vertical convergence adjustment data (V CONV data) and horizontal convergence adjustment data (H CONV data) to the same value as the 4:3 NORMAL SCAN mode.
3. Check the horizontal and vertical convergence, and if there is misconvergence, adjust again.

3-7-3. 14-inch Model Convergence Adjustment

• 4:3 NORMAL SCAN mode

1. Set the SCREEN MODE to 4:3 NORM at the INPUT CONFIGURATION menu.
2. Input the cross hatch signal.
3. Minimize the vertical misconvergence at the center of the left side of the screen and the center of the right side of the screen using the DY correction reactor XCV (TH).
4. Minimize the vertical misconvergence at the top and bottom of the screen using the DY correction reactor YCH.
   * As TLV is used for adjusting the horizontal trapezed distortion, only when MSV is very bad should it be adjusted while maintaining the balance with the horizontal trapezoid distortion.
5. Adjust the V CONV BOTTOM data and V CONV TOP data so that the vertical misconvergence at the top and bottom of the screen becomes minimum.
   (Do not change the value of the H STATIC CONV data (128).)
   Note: The V CONV BOTTOM and V CONV TOP adjustment menus are under the E BOARD menu of the MAINTENANCE menu.

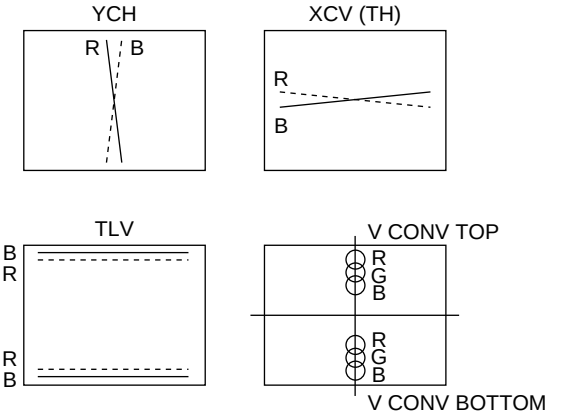


Fig. 1-22

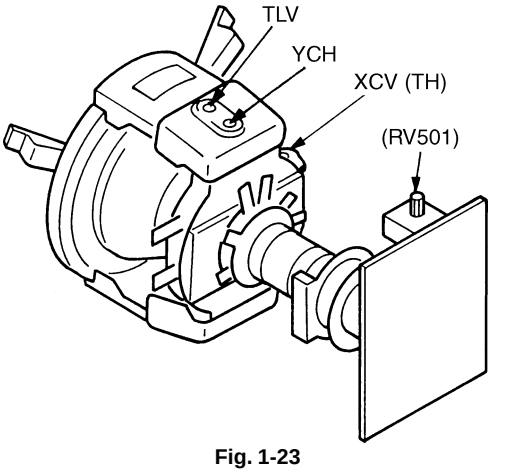


Fig. 1-23

• 4:3 UNDER SCAN Mode

1. Set the SCREEN MODE to 4:3 UNDR at the INPUT CONFIGURATION menu of the SETUP menu.
2. Set the vertical convergence adjustment data (V CONV data) to the same value as the 4:3 NORMAL SCAN mode.
3. Check the horizontal and vertical convergence, and if there is misconvergence, adjust again.

• 16:9 NORMAL SCAN Mode

1. Set the SCREEN MODE to 16:9 NORM at the INPUT CONFIGURATION menu of the SETUP menu.
2. Set the vertical convergence adjustment data (V CONV data) to the same value as the 4:3 NORMAL SCAN mode.
3. Check the horizontal and vertical convergence, and if there is misconvergence, adjust again.

• 16:9 UNDER SCAN Mode

1. Set the SCREEN MODE to 16:9 UNDR at the INPUT CONFIGURATION menu of the SETUP menu.
2. Set the vertical convergence adjustment data (V CONV data) to the same value as the 4:3 NORMAL SCAN mode.
3. Check the horizontal and vertical convergence, and if there is misconvergence, adjust again.

3-8. G2 Adjustment

Note: The G2 REF Adjustment menu is under the BK BOARD menu of the MAINTENANCE menu.

1. Input the color bar signal.
2. Connect the R, G, and B cathodes of the C board to the probes of the oscilloscope, and check the DC voltage of the color bar signal pedestal. (20V/Div)
3. Connect the cathode with the highest pedestal DC voltage to the probe of the oscilloscope.
4. Adjust the G2 REF data so that the pedestal DC voltage becomes 97.0 ±3.0 V.

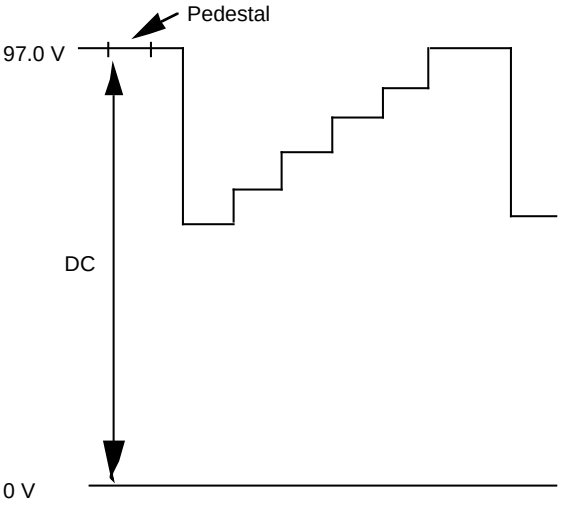


Fig. 1-24

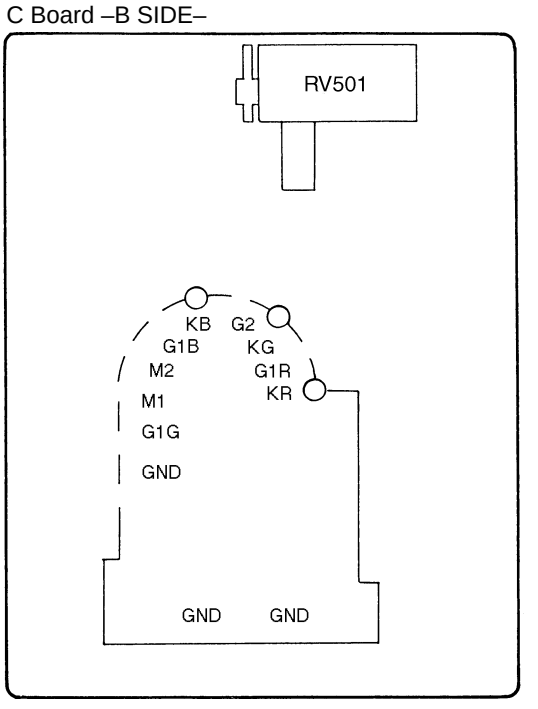


Fig. 1-25

3-9. White Balance Adjustment

1. Outline of Adjustments and Calibration of Color Analyzer Used for Adjustments.

Perform the following adjustments.

1.1 Creating the parameters used for converting the CRT RGB drive voltage into color temperature coordinates.

This monitor is equipped with a function for copying color temperature between several monitors.

Because the CRT drive voltage depends on the CRT, the same color temperature will not be attained amongst several monitors even if the same drive voltage has been supplied.

For this reason, to copy a color temperature between several monitors, it is necessary to send the required data using parameters which do not depend on the CRT such as the xyY color temperature coordinates.

Select and execute the SYSTEM/COLOR TEMP/FACTORY SET menu on the MAINTENANCE menu. The D93 color temperature will automatically be adjusted and at the same time, the drive voltage and color temperature coordinates conversion parameter will be created.

Use this parameter for copying the color temperature to other monitors and for copying the color temperature to the memory card.

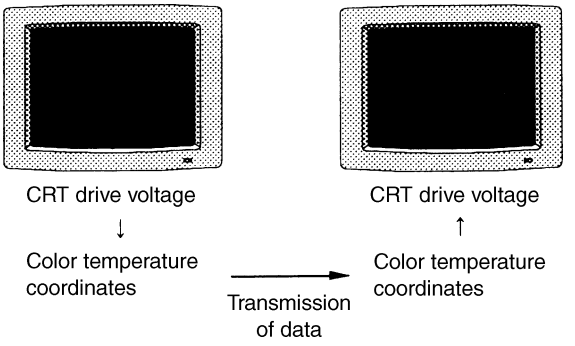


Fig. 1-26

1.2 D65/D56 Color Temperature Adjustment

Perform the D56 adjustment only for BVM-14G1U/14G5U/20G1U.

1.3 Copying Color Temperature Data D65/D93/D56 to Color Temperature STD, COL1, COL2, AUX

Calibration of Color Analyzer

Generally, to measure the color temperature of a monitor using several color analyzers, these color analyzers will show different values. The values measured by the color analyzer will also change with time. For this reason, color analyzers used for this adjustment should be calibrated first so that they will show the correct values for the following color temperature coordinates.

	x	y	y (cd/m2)
D65	0.313	0.329	2.7
	0.313	0.329	100
D93	0.283	0.297	2.7
	0.283	0.297	100
D56	0.331	0.346	2.7
	0.331	0.346	100

2. Adjustment Standard

2.1 Input the following signal to the G/Y input terminal of the BK board to display it on the screen.
For BVM-14G1U/14G5U/20G1U: NTSC signal
For BVM-14G1A/14G1E/14G5A/14G5E/20G1A/20G1E: PAL signal

2.2 Connect the RS-232C terminal of the CA-100 with the OPTION terminal of the monitor using the cable shown in “Required Tools and Measuring Instruments 5.” (Refer to page 3-1).

2.3 Set the CA-100 as shown below, and connect the measuring probe of the CA-100 at the center of the CRT screen.
Display mode : xyY mode
Baud Rate : 9600

3. Select the SYSTEM/COLOR TEMP menu on the MAINTENANCE menu.

4. Select D93 of COLOR TEMP, cover the CRT screen with a black cloth, select FACTORY SET, and start automatic adjustments.

5. Select D65 of COLOR TEMP, and select the PROBE/MINOLTA CA-100 menu. After selecting D65, cover the CRT screen with a black cloth, and select START to start automatic operations.

6. Execute this adjustment only for BVM-14G1U/14G5U/20G1U.
Select AUX of COLOR TEMP, and select the PROBE/MINOLTA CA-100 menu.
After setting X = 0.331, Y = 0.346, LOWLIGHT = 2.7, and HIGHLIGHT = 100, cover the CRT screen with a black cloth, and select START to start automatic operations.

7. Select the SYSTEM/COLOR TEMP/COPY/OTHER VALUE menu on the MAINTENANCE menu.

8. Select STD of COLOR TEMP, perform the following “D65”, and copy the color temperature data to STD.

9. Select COLOR1 of COLOR TEMP, perform the following “D93”, and copy the color temperature data to COLOR1.

10. Select COLOR2 of COLOR TEMP, perform the following step, and copy the color temperature data to COLOR2.
For BVM-14G1U/14G5U/20G1U: Select AUX
For BVM-14G1A/14G1E/14G5A/14G5E/20G1A/20G1E: Select D65

11. Execute this adjustment only for BVM-14G1A/14G1E/14G5A/14G5E/20G1A/20G1E.
Select AUX of COLOR TEMP, perform the following “D65”, and copy the color temperature data to AUX.

SECTION 4
SAFETY RELATED ADJUSTMENTS

+B (120V) Voltage Check

Perform the following checks when replacing the following components (marked ◪ on the schematic diagram).

◪ G board R307, R332, R333, R336, R337, R338, IC301, IC302, PH301

1. Connect a digital voltmeter to TP303 (+120 V) and TP304 (GND) of the G board.
   • Digital voltmeter: More than 4 digits
2. Input the cross hatch signal.
3. Set the BRIGHTNESS VR and CONTRAST VR buttons to the preset condition.
   [The LEDs (green) on the buttons go off.]
4. Turn ON the power and check the TP303 (+120 V) voltage to 120.0 ±4.0 V.

High Voltage Regulator Check

Perform the following checks when replacing the following components (marked ◪ on the schematic diagram).

◪ E board R501, R502, R503, R504, R505, R511, IC501, IC502, IC503

1. Turn OFF the power.
2. Connect the digital voltmeter to pins ⑤ and ① of CN501 on the E board.
3. Turn ON the power.
4. Input the dot signal.
5. Set the BRIGHTNESS VR and CONTRAST VR to the minimum condition.
6. Check that the pin ⑤ of CN501 voltage value is within the following range.
   20-inch model: –21.8 to –23.0 V
   14-inch model: –19.5 to –21.0 V

High Voltage Hold-Down Check

Perform the following checks when replacing the following components (marked ◪ on the schematic diagram).

◪ E board R531, R532, R533, R534, R542, R543, R544, R545, R548, IC071, IC502, IC531
◪ P board R904, R905, R906

1. Turn OFF the power.
2. Connect the digital voltmeter to the pins ⑤ and ① of CN501 on the E board.
3. Connect a 200 kΩ variable resistor between pins ② and ① of CN501 on the E board.
   (Maximize the resistance of the 200 kΩ variable risistor.)
4. Set the BRIGHTNESS VR and CONTRAST VR to the minimum condition.
5. Turn ON the power.
6. Input the dot signal.
7. Check that when the resistance of the 200 kΩ variable resistor connected to pin ② of CN501 is gradually reduced, the HV protect operated at the following values.
   20-inch model: –26.4 to –30.3 V
   14-inch model: –23.3 to –26.8 V
8. Turn OFF the power.
9. Disconnect the 200 kΩ variable resistor.
10. Connect the digital voltmeter to the pins ④ and ① of CN501 on the E board.
11. Turn ON the power.
12. Input the monoscope signal or all-white signal.
13. Set the BRIGHTNESS VR and CONTRAST VR to the minimum condition.
14. Check that when the BRITNESS VR and CONTRAST VR is gradually enlargement, the IK protect operated at the following values.
    Standard Value: –1.44 to –1.56 V

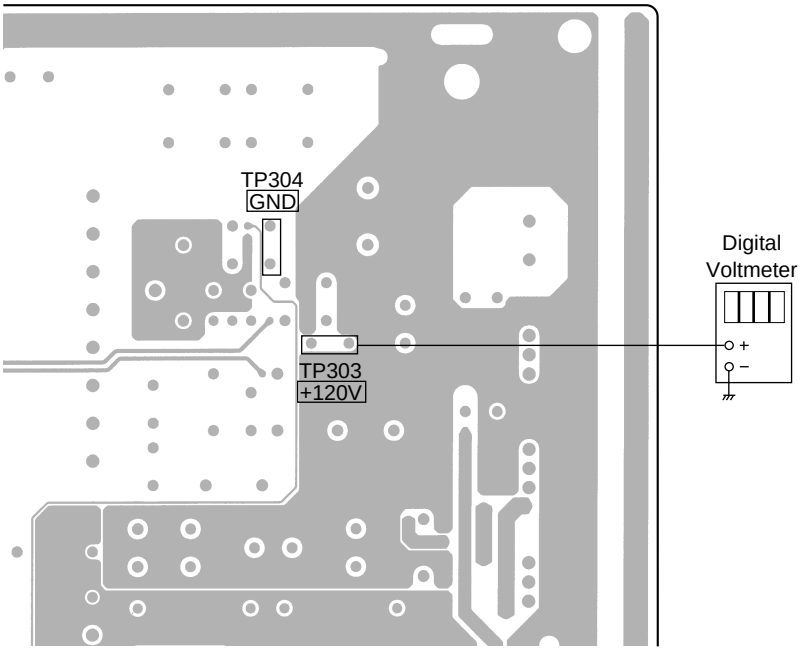
Beam Current Protector Check

Perform the following checks when replacing the following components (marked ◪ on the schematic diagram).

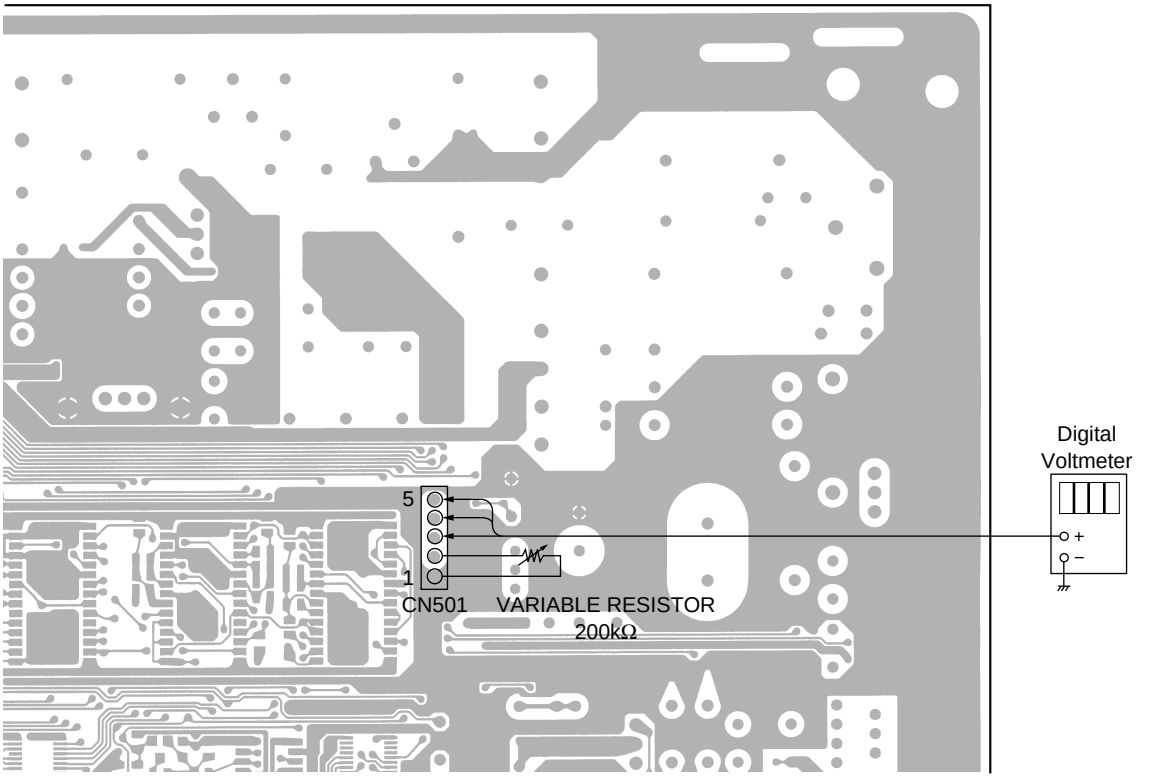
◪ E board R571, IC501
P board R901, R902, R903
BK board R912, R913, IC901

1. Turn OFF the power.
2. Connect the digital voltmeter to the pins ③ and ① of CN501 on the E board.
3. Turn ON the power.
4. Input the all white signal or monoscope signal.
5. Set the BRIGHTNESS VR and CONTRAST VR to the maximize condition.
6. Check the pin ③ of CN501 voltage to –0.94 to –1.05 V.

G BOARD
– A SIDE –



E BOARD
– A SIDE –



SECTION 5
CIRCUIT ADJUSTMENTS

5-1. BK Board
5-1-1. Adjustments 1

Set as follows at the INPUT CONFIGURATION menu of the SETUP menu.

FORMAT ..... COMPONENT YUV SMPTE/EBU N-10
SLOT NO 6
SYNC MODE ..... INT

Select BK BOARD DATA LOAD from BK BOARD menu of MAINTENANCE menu and execute.

- **Connection**

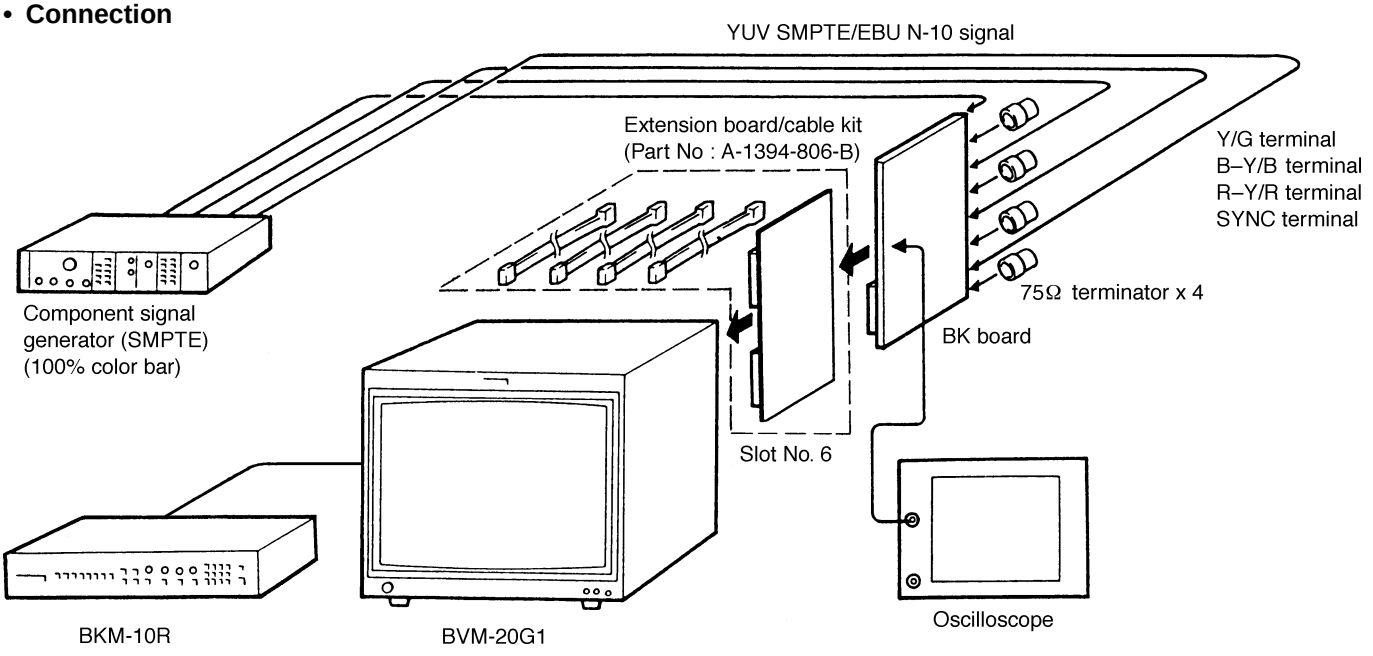


Fig. 5-1

- **Arrangement Diagram for Adjustment Parts**

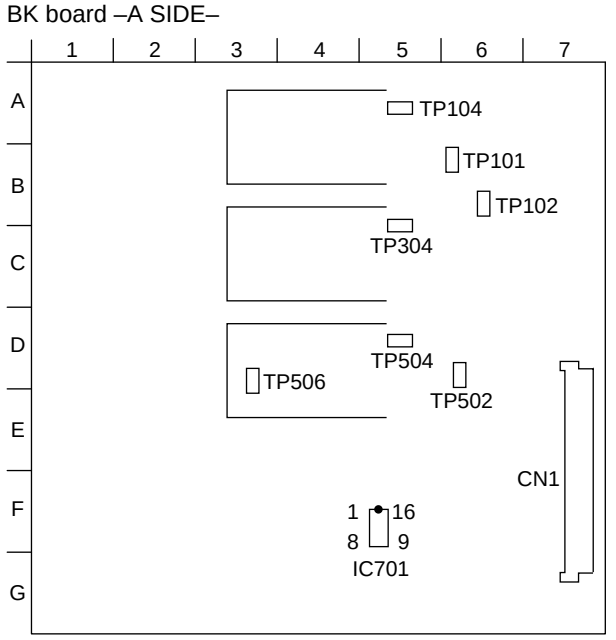


Fig. 5-2

1. Bright Center Adjustment

1. Input the component color bar signal (YUV SMPTE/EBU N-10).
2. Set the BRIGHT data to 2048 using the BRIGHT knob.
3. Connect an oscilloscope to pin ⑯ of IC701 of the BK board.
4. As shown in Fig. 5-3, adjust the BRT CENTER data so that the waveform becomes flat.

Note: The BRT CENTER adjustment menu is under the BK BOARD menu of the MAINTENANCE menu.

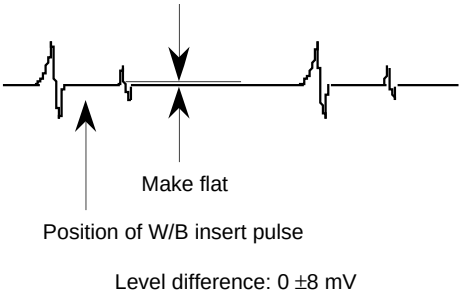


Fig. 5-3

2. Clamp Level Adjustment

Note: The following adjustment menus are under the BK BOARD menu of the MAINTENANCE menu.

Y CLAMP OFFSET
R–Y CLAMP OFFSET
B–Y CLAMP OFFSET

1. Input the component color bar signal (YUV SMPTE/ EBU-N10).
2. Connect the oscilloscope to TP101.
3. As shown in Fig. 5-4, adjust the Y CLAMP OFFSET data so that the pedestal and clamp offset pulse level becomes equal.

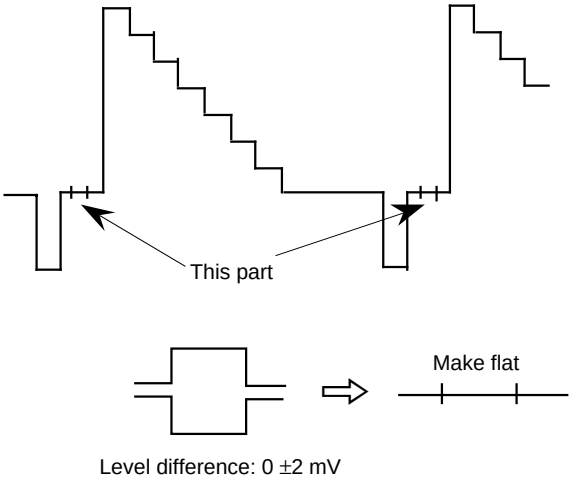


Fig. 5-4

4. Connect the oscilloscope to TP302.
5. As shown in Fig. 5-5, adjust the R–Y CLAMP OFFSET data so that the pedestal and clamp offset pulse level becomes equal.

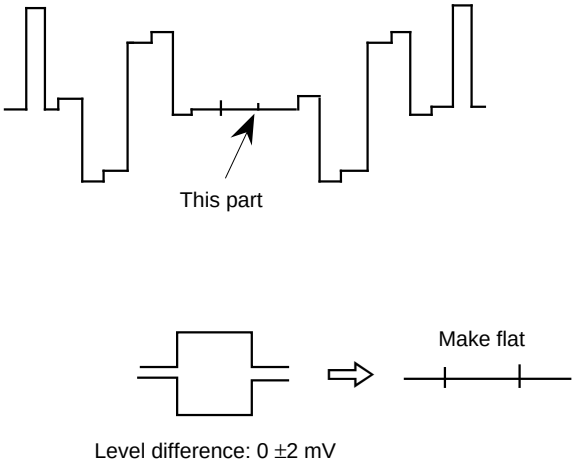


Fig. 5-5

6. Connect the oscilloscope to TP502.
7. As shown in Fig. 5-6, adjust the B–Y CLAMP OFFSET data so that the pedestal and clamp offset pulse level becomes equal.

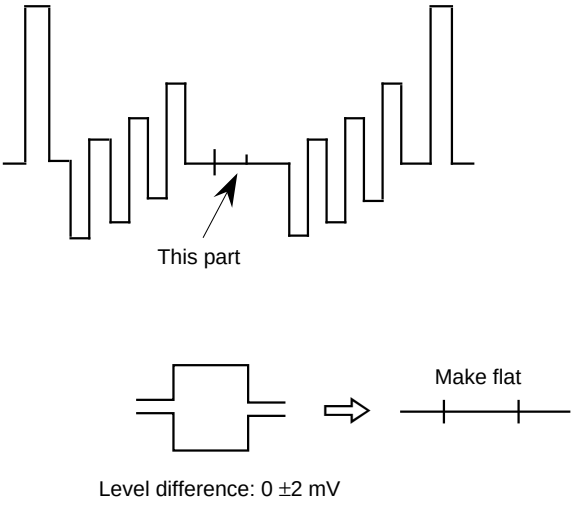


Fig. 5-6

5-1-2. Adjustments 2

Perform the following adjustments for each of the following five input signals.

Set the settings required for each signal at the INPUT CONFIGURATION of the SETUP menu. When inputting the composite signal, insert the NTSC input adapter BKM-24N (NTSC)/25P (PAL) into the empty slot of the unit.

1. COMPONENT SMPTE/EBU-N10
   - 100% color bar signal
     - All white peak 700 mV
     - B–Y 700 mV p-p
     - R–Y 700 mV p-p
   - 100 IRE all white signal
     - All white peak 700 mV
   - 20 IRE all white signal
     - All white peak 140 mV
2. COMPONENT BETACAM SETUP 7.5
   - 75% color bar signal
     - All white peak 714.29 mV
     - B–Y 700 mV p-p
     - R–Y 700 mV p-p
   - 100 IRE all white signal
     - All white peak 714.29 mV
   - 20 IRE all white signal
     - All white peak 142.86 mV
3. COMPONENT BETACAM SETUP 0
   - 75% color bar signal
     - All white peak 714 mV
4. COMPOSITE NTSC SETUP 7.5
   - 100% color bar signal
     - All white peak 714 mV
5. COMPOSITE NTSC SETUP 0
   - 100% color bar signal
     - All white peak 714 mV

Set as follows at the INPUT CONFIGURATION menu of the SETUP menu.

FORMAT ..... Set according to the input signal

SLOT NO ..... When component signal is input: 6
When composite signal is input: Slot no. when BKM-24N (NTSC)/25P (PAL) is mounted.

SYNC MODE ..... INT

Configuration when Component Signal is Input

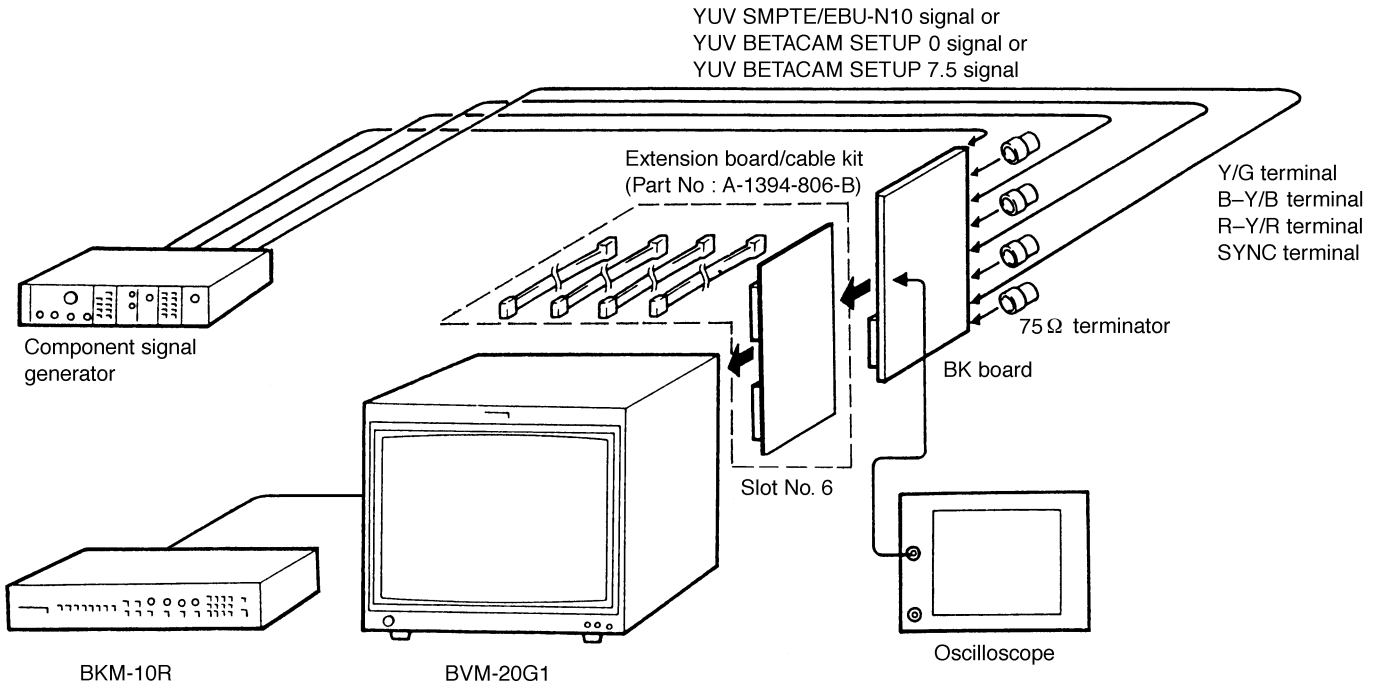


Fig. 5-7

Configuration when Composite Signal is Input

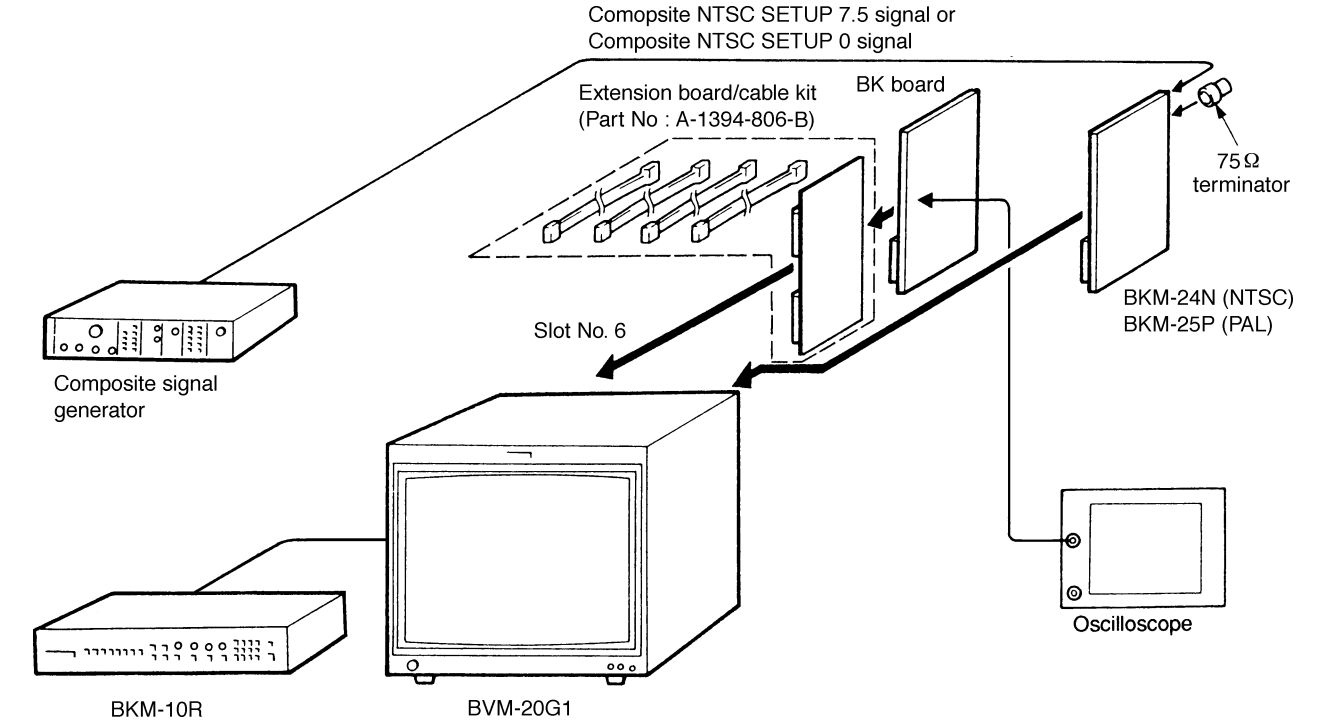
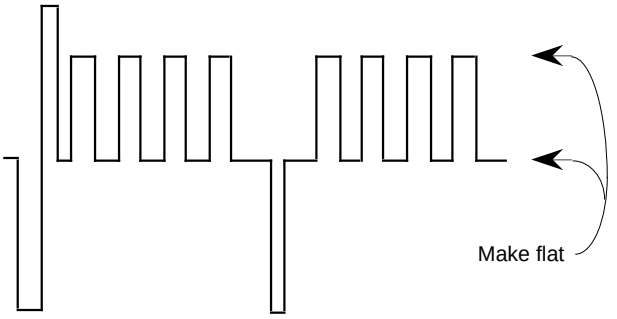


Fig. 5-8

1. Pulse Level Adjustment

Note: The following adjustment menus are under the BK BOARD menu of the MAINTENANCE menu.
B–Y PULSE LEVEL
R–Y PULSE LEVEL

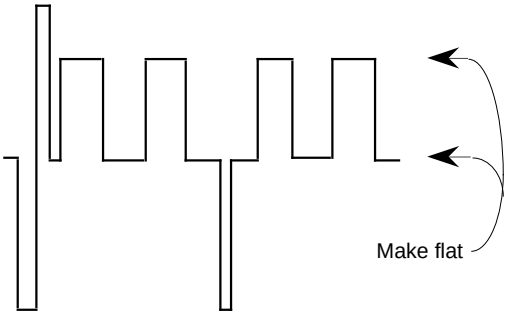
1. Input the color bar signal.
2. Set the CHROMA data to 1280 using the CHROMA knob.
3. Connect the oscilloscope to TP504.
4. As shown in Fig. 5-10, adjust the B–Y PULSE LEVEL data so that the BLUE waveform becomes flat.



Level difference: 0 ±10 mV

Fig. 5-9

5. Connect the oscilloscope to TP104.
6. As shown in Fig. 5-11, adjust the R–Y PULSE LEVEL data so that the RED waveform becomes flat.



Level difference: 0 ±10 mV

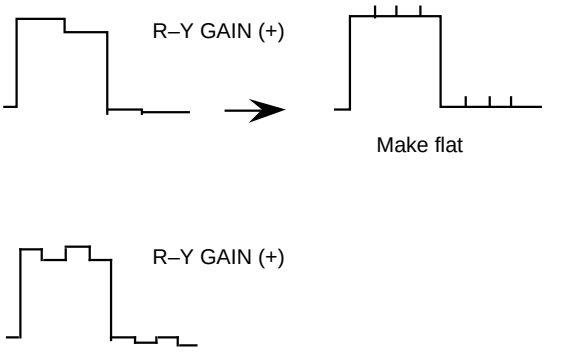
Fig. 5-10

2. R–Y Gain, B–Y Gain Adjustment

Note: The following adjustment menus are under the BK BOARD menu of the MAINTENANCE menu.
B–Y GAIN
R–Y GAIN

Perform this adjustment only for "1. COMPONENT SMPTE/EBU-N10".

1. Input the color bar signal.
2. Set the CHROMA data to 1280 using the CHROMA knob.
3. Connect the oscilloscope to TP304.
4. As shown in Fig. 5-7, adjust the R–Y GAIN data and B–Y GAIN data so that the GREEN waveform becomes flat.



Level difference: 0 ±10 mV

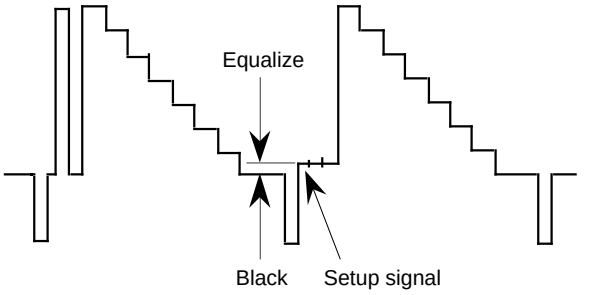
Fig. 5-11

3. 0% Setup Adjustment

Note: The following adjustment menus are under the BK BOARD menu of the MAINTENANCE menu.

R SETUP
G SETUP
B SETUP

1. Input only the Y signal of the color bar signal (Turn off the R–Y signal and B–Y signal.).
2. Connect the oscilloscope to TP104.
3. As shown in Fig. 5-12, adjust the R SETUP data so that the black level and setup signal level becomes equal.
4. Connect the oscilloscope to TP304.
5. As shown in Fig. 5-12, adjust the G SETUP data so that the black level and setup signal level become equal.
6. Connect the oscilloscope to TP504.
7. As shown in Fig. 5-12, adjust the B SETUP data so that the black level and setup signal level become equal.



Level difference: 0 ±2 mV

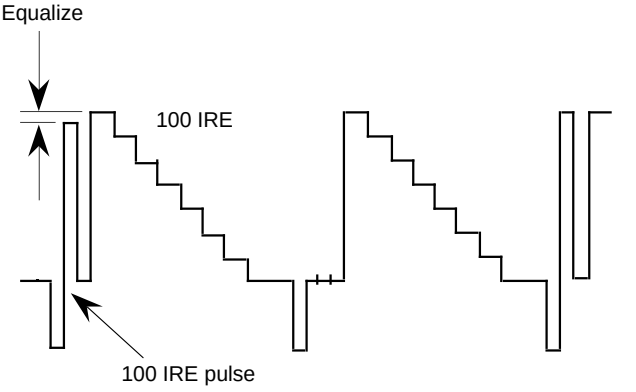
Fig. 5-12

4. 100 IRE Adjustment

Note: The following adjustment menus are under the BK BOARD menu of the MAINTENANCE menu.

R 100 IRE
G 100 IRE
B 100 IRE

1. Input the color bar signal.
2. Connect the oscilloscope to TP104.
3. As shown in Fig. 5-13, adjust the R 100 IRE data so that the 100 IRE level and 100 IRE pulse level of the signal become equal.
4. Connect the oscilloscope to TP304.
5. As shown in Fig. 5-13, adjust the G 100 IRE data so that the 100 IRE level and 100 IRE pulse level of the signal become equal.
6. Connect the oscilloscope to TP504.
7. As shown in Fig. 5-13, adjust the B 100 IRE data so that the 100 IRE level and 100 IRE pulse level of the signal become equal.



Level difference: 0 ±2 mV

Fig. 5-13

5. BIAS REF Adjustment

Note: The following adjustment menu is under the BK BOARD menu of the MAINTENANCE menu.
BIAS REF

Perform this adjustment only for "1. COMPONENT SMPTE/EBU-N10".

1. Input the 20 IRE all-white signal.
2. Connect the oscilloscope to TP506 and V period.
3. As shown in Fig. 5-14, adjust the BIAS REF data so that the all white peak level and BIAS REF pulse level of the signal become equal.
   All-white peak: 140 mV

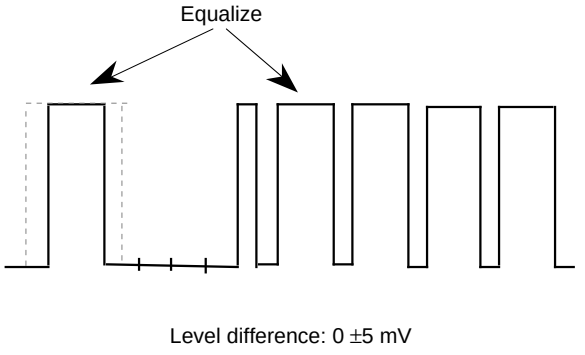


Fig. 5-14

6. DRIVE REF Adjustment

Note: The following adjustment menu is under the BK BOARD menu of the MAINTENANCE menu.
DRIVE REF

Perform this adjustment only for "1. COMPONENT SMPTE/EBU-N10".

1. Input the 100 IRE all-white signal.
2. Connect the oscilloscope to TP506.
3. As shown in Fig. 5-15, adjust the DRIVE REF data so that the all white peak level and DRIVE REF pulse level of the signal become equal.

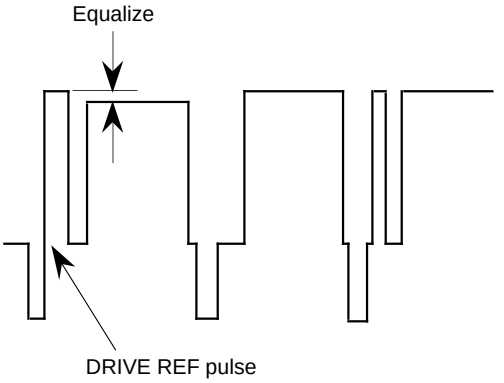


Fig. 5-15

5-1-3. Adjustments 3

Perform the following adjustments using the RGB input signals. Set as follows at the INPUT CONFIGURATION menu of the SETUP menu.

FORMAT ..... COMPONENT RGB
SLOT NO 6
SYNC MODE ..... INT

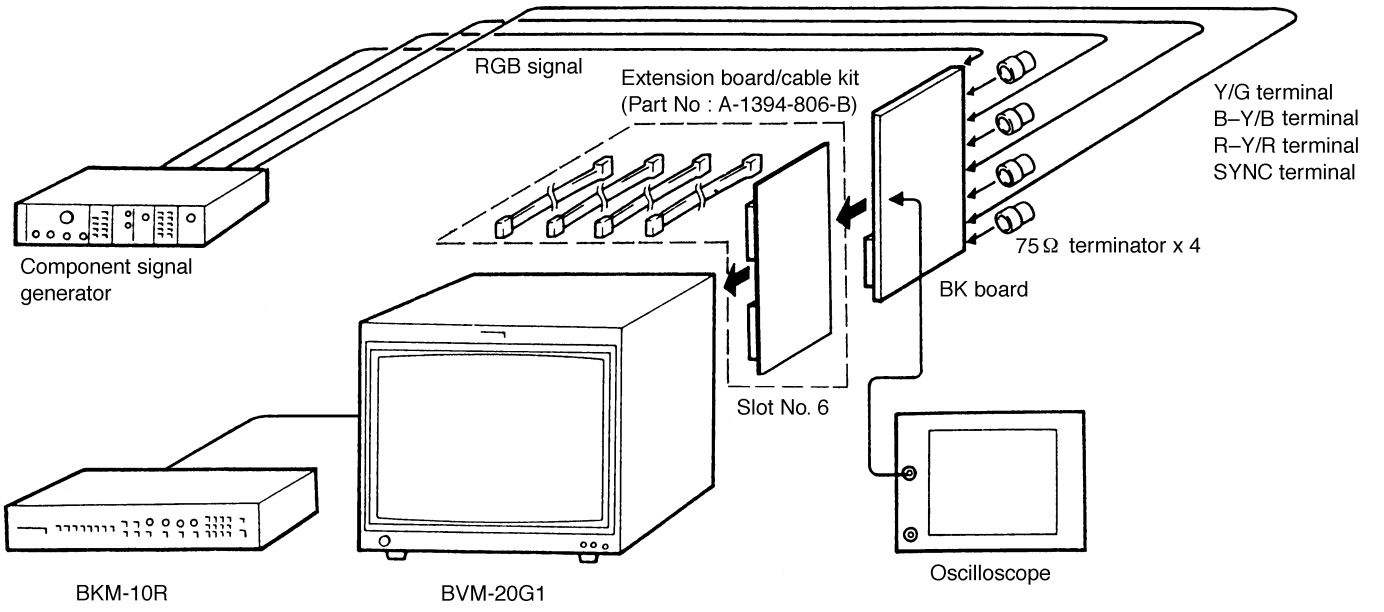


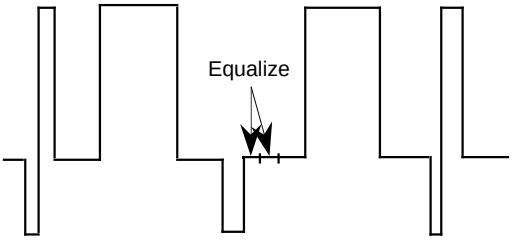
Fig. 5-16

1. RGB Signal SETUP Adjustment

Note: The following adjustment menus are under the BK BOARD menu of the MAINTENANCE menu.

R SETUP
G SETUP
B SETUP

1. Input 100 IRE RGB signal.
2. Connect the oscilloscope to TP104.
3. Adjust the R SETUP data so that the black level and setup signal level become equal.
4. Connect the oscilloscope to TP304.
5. Adjust the G SETUP data so that the black signal level and setup signal level become equal.
6. Connect the oscilloscope to TP504.
7. Adjust the B SETUP data so that the black signal level and setup signal level become equal.



Level difference: 0 ±2 mV

Fig. 5-17

2. RGB Signal 100 IRE Adjustment

Note: The following adjustment menus are under the BK BOARD menu of the MAINTENANCE menu.

R 100 IRE
G 100 IRE
B 100 IRE

1. Input the 100 IRE RGB signal.
2. Connect the oscilloscope to TP104.
3. Adjust the R 100 IRE data so that the 100 IRE level and 100 IRE pulse level of the signal become equal.
4. Connect the oscilloscope to TP304.
5. Adjust the G 100 IRE data so that the 100 IRE level and 100 IRE pulse level of the signal become equal.
6. Connect the oscilloscope to TP504.
7. Adjust the B 100 IRE data so that the 100 IRE level and 100 IRE pulse level of the signal become equal.

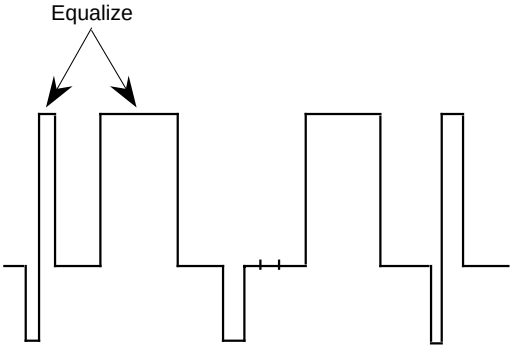


Fig. 5-18

5-1-4. White Balance Adjustment

Refer to “3. SET-UP ADJUSTMENTS (3-9. White balance adjustment)” (Page 3-12)

5-2. BC Board

5-2-1. Adjust Preparation

Set 1CH as follows using INPUT CONFIGURATION menu of the SETUP menu.

FORMAT ..... COMPONENT YUV SMPTE/EBU N-10
SLOT NO 6
SYNC MODE ..... INT

- **Connection**

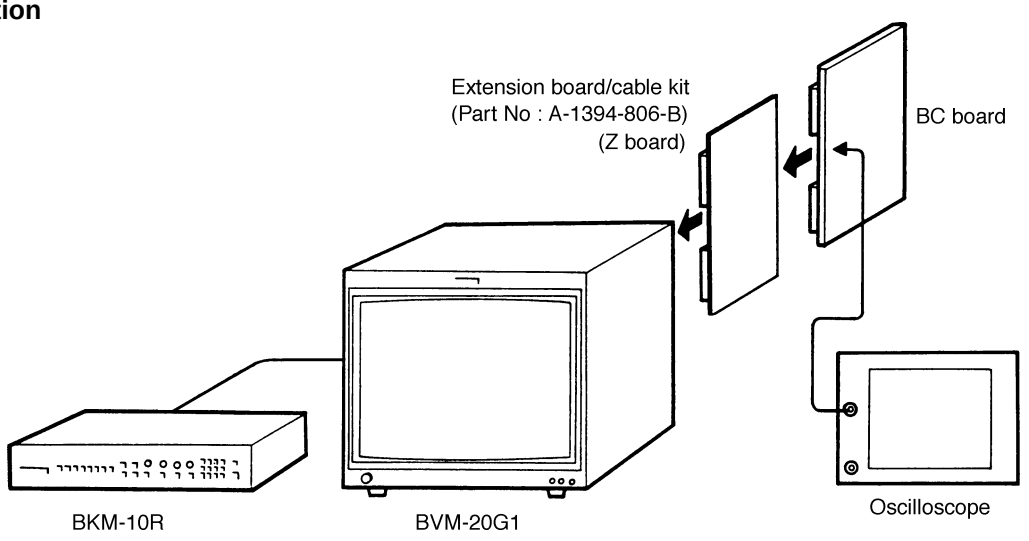


Fig. 5-19

- **Arrangement Diagram for Adjustment Parts**

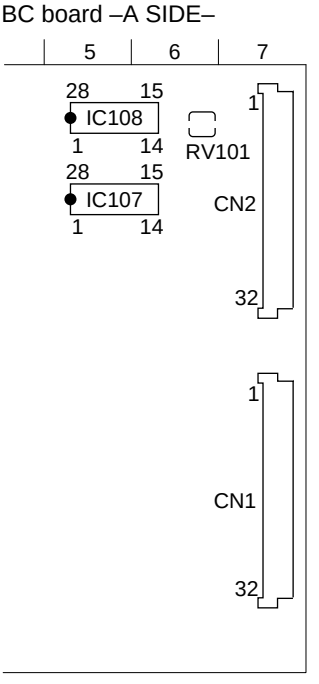


Fig. 5-20

5-2-2. D/A Level Adjustment

1. Connect the oscilloscope to pin (B10) of CN1 of the BC board.
2. Select the 93-ch menu on the MAINTENANCE menu and output an internal white signal.
3. Adjust RV101 so that the 660 ±20 mV.

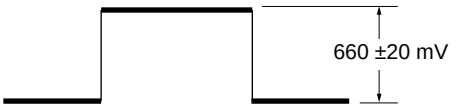


Fig. 5-21

5-2-3. SETUP Level of Built-in Signal and 100 IRE Level is Automatic operation.

1. Select the EXTEND menu of SETUP menu.
2. Select the ADJ INT SIGNAL menu and SETUP level of built-in signal and 100 IRE level is automatic operation and execule.
3. Displayed the PROCEDER COMPLETED is after 10 to 15 second and automatic operation is completion.

5-3. E Board

5-3-1. Adjust Preparation

Set as follows at the INPUT CONFIGURATION menu of the SETUP menu.

FORMAT ..... COMPONENT YUV SMPTE/EBU N-10
SLOT NO 6
SYNC MODE ..... INT

Select E BOARD DATA LOAD from E BOARD menu of MAINTENANCE menu and execute.

- **Connection**

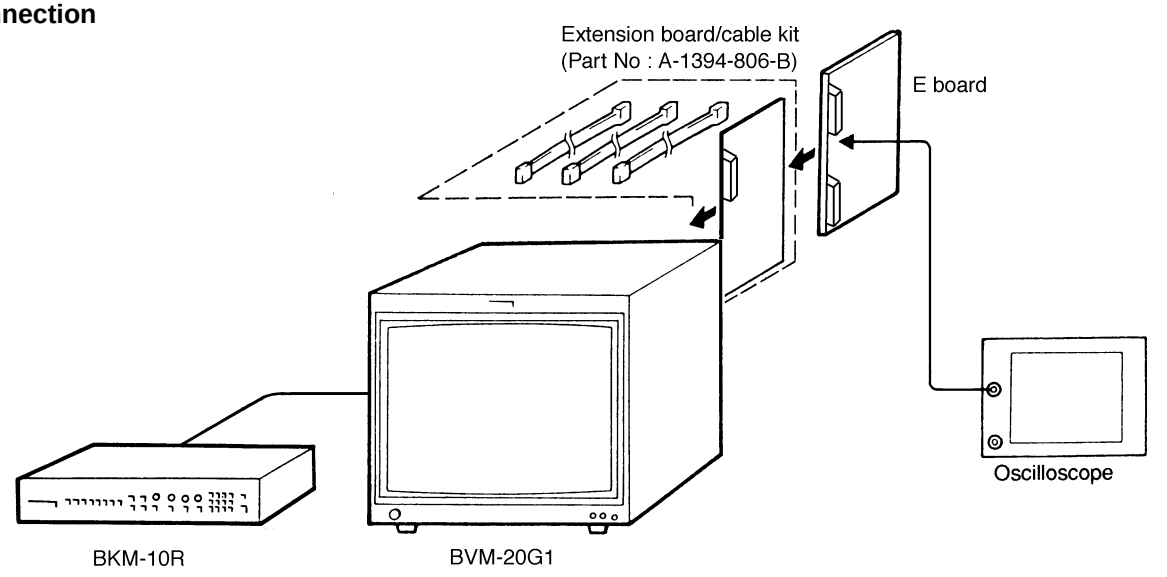


Fig. 5-22

- **Arrangement Diagram for Adjustment Parts**

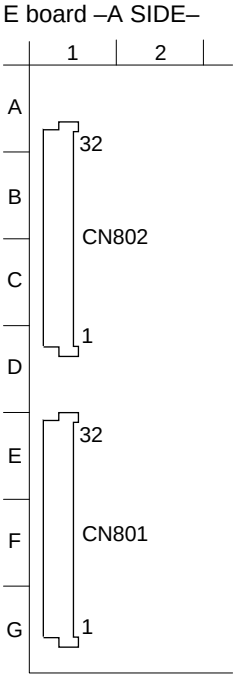
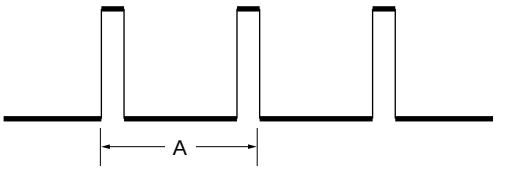


Fig. 5-23

5-3-2. V BLK Adjustment

1. Connect an oscilloscope to pin (9a) of the E board.
2. Set the SCREEN MODE to 16:9 NORM at the INPUT CONFIGURATION menu of the SETUP menu.
3. Adjust the V BLK data so that the V blanking pulse width to the 520 ±30 µsec.
4. Copy the V BLK data to other mode.

Note: The V BLK adjustment menu is under the E BOARD menu of the MAINTENANCE menu.



A = 520 ±30 µsec

Fig. 5-24

5-3-3. H BLK Adjustment

Note: The H BLK adjustment menu is under the E BOARD menu of the MAINTENANCE menu.

1. Connect the oscilloscope to the pin (8b) of CN801 on the E board.

• **16:9 NORMAL SCAN mode**

1. Set the SCREEN MODE to 16:9 NORM at the INPUT CONFIGURATION menu of the SETUP menu.
2. Adjust the H BLK data so that the H blanking pulse width to the 11.5 ±0.3 µsec.
   Write down the H BLK data.

• **16:9 UNDER SCAN mode**

1. Set the SCREEN MODE to 16:9 UNDR at the INPUT CONFIGURATION menu of the SETUP menu.
2. Set the H BLK data to the same value as the 16:9 NORMAL SCAN mode.

• **4:3 NORMAL SCAN mode**

1. Set the SCREEN MODE to 4:3 NORM at the INPUT CONFIGURATION menu of the SETUP menu.
2. Adjust the H BLK data so that the H blanking pulse width to the 8.0 ±0.2 µsec.
   Write down the H BLK data.

• **4:3 UNDER SCAN mode**

1. Set the SCREEN MODE to 4:3 UNDR at the INPUT CONFIGURATION menu of the SETUP menu.
2. Set the H BLK data to the same value as the 4:3 NORMAL SCAN mode.

5-3-4. H Blanking Adjustment

Refer to "3. SET-UP Adjustment (3-4. H Blanking Adjustment)" (Page 3-3).

5-3-5. V Blanking Adjustment

Refer to "3. SET-UP Adjustment (3-5. V Blanking Adjustment)" (Page 3-5).

5-3-6. Linearity Adjustment

Refer to "3. SET-UP Adjustment (3-6. Linearity Adjustment)" (Page 3-6).

5-3-7. Convergence Adjustment Preparation

Refer to "3. SET-UP Adjustment (3-2. Focus Adjustment), (3-3. Landing Adjustment), (3-4. H Blanking Adjustment)" (Page 3-2 and 3-3).

5-3-8. Static Convergence Adjustment

• **Horizontal Static Convergence**

Adjust H STATIC CONV data so that red and green dots match in the horizontal direction at the center of the screen.

Note: H STATIC CONV adjustment menu is under E BOARD menu of MAINTENANCE menu. (See Fig. 1-14)

• **Vertical Static Convergence**

Adjust V STATIC CONV data so that red and green dots match in the horizontal direction at the center of the screen.

Note: V STATIC CONV adjustment menu is under E BOARD menu of MAINTENANCE menu. (See Fig. 1-14)

5-3-9. Convergence Adjustment 20-Inch Model

• **Preparation**

Refer to "3. SET-UP Adjustment (3-7-2. 20-Inch Model Convergence Adjustment)" (Page 3-9).

• **Vertical convergence adjustment**

Adjust V STATIC BOTTOM data and V STATIC TOP data so that a vertical mis-convergence is minimized at the top and bottom areas of the screen.

Note: V STATIC BOTTOM data and V STATIC TOP data adjustment menu is under E BOARD menu of MAINTENANCE menu. (See Fig. 1-20)

• **Horizontal convergence adjustment**

Refer to "3. SET-UP Adjustment (3-7-2. 20-Inch Model Convergence Adjustment)" (Page 3-9).

• **4:3 UNDER SCAN mode convergence adjustment**

Refer to "3. SET-UP Adjustment (3-7-2. 20-Inch Model Convergence Adjustment)" (Page 3-9).

• **16:9 NORMAL SCAN mode convergence adjustment**

Refer to "3. SET-UP Adjustment (3-7-2. 20-Inch Model Convergence Adjustment)" (Page 3-9).

• **16:9 UNDER SCAN mode convergence adjustment**

Refer to "3. SET-UP Adjustment (3-7-2. 20-Inch Model Convergence Adjustment)" (Page 3-9).

5-3-10. Convergence Adjustment of 14-Inch Model

- **Preparation**
  Refer to “3. SET-UP Adjustment (3-7-3. 14-Inch Model Convergence Adjustment)” (Page 3-10).

- **Convergence adjustment**
  Adjust V STATIC BOTTOM data and V STATIC TOP data so that a vertical mis-convergence is minimized at the top and bottom areas of the screen.
  Note: V STATIC BOTTOM data and V STATIC TOP data adjustment menu is under E BOARD menu of MAINTENANCE menu. (See Fig. 1-22)

- **4:3 UNDER SCAN mode convergence adjustment**
  Refer to “3. SET-UP Adjustment (3-7-3. 14-Inch Model Convergence Adjustment)” (Page 3-10).

- **16:9 NORMAL SCAN mode convergence adjustment**
  Refer to “3. SET-UP Adjustment (3-7-3. 14-Inch Model Convergence Adjustment)” (Page 3-10).

- **16:9 UNDER SCAN mode convergence adjustment**
  Refer to “3. SET-UP Adjustment (3-7-3. 14-Inch Model Convergence Adjustment)” (Page 3-10).

SECTION 6
CIRCUIT DESCRIPTIONS

6-1. BK Board Descriptions

1-1. BK Select Switch

When the $\overline{\text{BK SELECT}}$ signal is "Low", the Y/G signal input to the Y/G terminal (TB1) is input to IC101 (1/3) via the buffer amplifier (Q100 and Q102). When "High", the Y/G signal input to the (11B) terminal of CN2 is input to IC101 (1/3).
At IC101 (1/3), the 2Y/2G signal input to the (12B) terminal of CN2 is switched.
The same is performed for the PB/B signal and PR/R signal.

1-2. Clamp Circuit (1)

The analog switch (IC101) turns on according to the Y–CLP–P pulse. As a result, the pedestal voltage of the Y/G signal is sample-held. At IC102 (1/2), this voltage and the reference voltage (Y CLAMP OFFSET voltage) are compared, the bias current of the Y/G signal clamp amplifier (Q103 to Q105) is controlled so that the pedestal voltage of the Y/G signal becomes reference voltage.
The same is performed for the PB/B signal and PR/R signal. However, the PR signal (R–Y signal) and PB signal (B–Y signal) are clamped by the C–CLP–P pulse.

1-3. W B INSERT Pulse Insertion Circuit

To adjust the level of the R–Y signal and B–Y signal, the WHITE pulse and BLACK pulse are alternately inserted in the horizontal blanking period of the signals.
For the Y/G signal, at IC101 (3/3), the voltage in the period where the WHITE and BLACK pulses are inserted is made 0 Vdc. For the R–Y signal, the WHITE and BLACK pulses are inserted at IC301 (3/3). The level of the WHITE pulse is set by the R–Y PULSE LEVEL voltage. The level of the BLACK pulse is set by the R–Y CLAMP OFFSET voltage. These two voltages are switched by the WHITE INSERT P at IC500 (2/3), passed through IC300 (1/2), and input to IC301 (3/3).
The same is performed for the B–Y signal.

1-4. Chroma Level Adjustment Circuit

The R–Y signal is level-adjusted by IC303 (gain control amplifier). The R–Y signal output from IC303 is input to IC304 (1/3) and the voltage of the WHITE pulse is sample-held. At IC302 (2/2), this voltage and the CHROMA voltage are compared, and the gain of IC303 is controlled. As a result, the WHITE pulse voltage becomes equal to the CHROMA voltage. Consequently, by varying the CHROMA voltage, the chroma level can be adjusted. The R–Y signal output from IC303 is also input to IC325. Here, the voltage of the BLACK pulse is sample-held. At IC320 (2/2), this voltage and the GND level is compared to control the DC bias of IC303. As a result, the pedestal level of the R–Y signal is fixed at the GND level.
The same is performed for the B–Y signal.

1-5. Matrix Circuit

The R, G, and B signals are created by inputting the Y, R–Y, and B–Y signals to the matrix circuit.

• R Signal Matrix Circuit

At Q140, the Y signal and R–Y signal are added to create the R signal.

• G Signal Matrix Circuit

At Q306, the R–Y signal which had passed through IC305 (gain control amplifier) is added with the B–Y signal. This signal is inverted, amplified, and added to the Y signal at Q350 to create the G signal. The mixing rate is determined by R332, R333, and R340. The R–Y, and B–Y GAIN is finely adjusted.

• B Signal Matrix Circuit

At Q540, the Y signal and B–Y signal are added to create the B signal.

1-6. RGB Switch

The RGB signal and R, G, and B signals are switched after the matrix circuit.

1-7. Clamp Circuit (2)

The voltage of the BLACK pulse of the R signal is sample-held by IC107. At IC106 (1/2), this voltage and the GND level are compared and the DC bias of the R signal amplifier (Q142 to Q144) is controlled. As a result, the pedestal level of the R signal is fixed at the GND level.
The same is performed for the G and B signals.

1-8. Half Blanking Switch

The character is half-blanked by the CHAR BLK signal.

1-9. 100 IRE Pulse, SET UP Pulse Insertion Circuit

To adjust the contrast, the 100 IRE pulse and SET UP pulse are alternately inserted in the horizontal blanking period of the R, G, and B signals.

For the R signal, at IC110 (2/3), the 100 IRE pulse and SET UP pulse are inserted. The level of the 100 IRE pulse is set by the R 100 IRE voltage. The level of the SET UP pulse is set by the R SET UP voltage. These two voltages are switched by WHITE INSERT P by IC113 (1/3), and input to IC110 (2/3).

The same is performed for the G and B signals.

1-10. Blue-Only Switch

In the blue-only mode, the B signal is output instead of the R signal at IC110 (3/3), and the B signal is output instead of the G signal at IC310 (3/3).

1-11. Contrast, Bright Adjustment Circuit

The R signal is contrast-adjusted by IC112 (gain control amplifier). The R signal output from IC112 and amplified by Q167 to Q169, input to IC113 (3/3), and the voltage of the 100 IRE pulse is sample-held. At IC114 (1/2), this voltage and the CONT voltage are compared, and the IC112 gain is controlled. As a result, the 100 IRE pulse and CONT voltage becomes equal. Consequently, by varying the CONT voltage, the contrast level can be adjusted. The R signal output from Q167 to Q169 is also input to IC113 (2/3). Here, the voltage of the SET UP pulse is sample-held. At IC114 (2/2), this voltage and the GND level is compared to control the DC bias of IC112. As a result, the pedestal level of the R signal is fixed at the GND level.

The DC bias of the R signal amplifier (Q167 to Q169) is controlled by the BRT voltage to adjust BRIGHT.

At IC701 (1/3), the BRT voltage is created by switching the BRIGHT voltage and BRT CENTER voltage in the period inserted with the pulse (100 IRE pulse, and SET UP pulse) and in other periods.

The same is performed for the B and G signals.

1-12. Pulse Insertion Circuit

At IC116, the BIAS REF pulse, DRIVE REF pulse, and character pulse are inserted in the R signal. The level of the BIAS REF pulse is set by the BIAS REF voltage. The level of the DRIVE REF pulse is set by the DRIVE REF voltage.

The same is performed for the B and G signals.

1-13. Drive Control Amplifier

To prevent the drive current of the CRT cathode from exceeding the reference value, and the drive voltage from exceeding the reference value, the levels of the R, G, and B signals are controlled.

The drive current of the CRT cathode is detected by the current of pin ⑤ of the VIDEO OUT amplifier (IC119). The current of pin ⑤ is clamped, I/V-converted by IC123, sampled by IC126 (2/3), and compared with the reference voltage (R DRIVE IK) at IC127 (2/2). When the drive current exceeds the reference value, the signal output from IC127 (2/2) is passed through IC117 (3/3), Q170 to Q172, and input to IC115 (R drive control amplifier) to lower its gain.

The drive voltage of the CRT cathode is detected by the voltage of pin ⑨ of the VIDEO OUT amplifier (IC119). The voltage of pin ⑨ is clamped by IC121, sampled by IC126 (1/3), and compared with the reference voltage (R DRIVE V) at IC127 (1/2). When the drive voltage exceeds the reference value, the signal output from IC127 (1/2) is passed through IC117 (2/3) and Q170 to Q172 and input to IC115 (R drive control amplifier) to lower its gain.

The SUB CPU (IC902) sets whether to control the drive amount based on the drive current (current mode) or control the drive amount according to the drive voltage (voltage mode) (IK/V SW). Normally, the SUB CPU operates in the voltage mode and sets into the current mode during WB adjustment. The DRIVE COMP is used for converting the data of DRIVE V in the voltage mode, and the data of DRIVE IK in the current mode.

1-14. Clamp Circuit (3)

The voltage of the BLACK pulse of the R signal is sample-held by IC117 (2/3). At IC118 (1/2), this voltage and the GND level are compared and the DC bias of the R signal amplifier (Q174 to Q176) is controlled. As a result, the pedestal level of the R signal is fixed at the GND level.

The same is performed for the G and B signals.

1-15. Cut-Off Switch

At IC117 (3/3), the VIDEO TIMING pulse is used to switch between the R signal and cut-off voltage (–0.3 Vdc.)

The same is performed for the G and B signals.

1-16. VIDEO OUT Amplifier

IC119 is used to drive the R signal cathode of the CRT.

The same is performed for the G and B signals.

1-17. G2 Control

Of the G2 R signal, G2 G signal, and G2 B signal, the signal with the lowest voltage is input to IC705 (1/2), compared with the reference voltage (G2 REF) to become the G2 CONTROL signal, and output from pin (10B) of CN1 to the E board through the C board to control the G2 voltage of the CRT.

2. ABL, Overload Detection

At IC901 (1/2), the ABL voltage and reference voltage (–1 Vdc) are compared. Normally, the ABL voltage is above –1 Vdc and therefore the output level of IC901 (1/2) is "High". If the ABL voltage goes down and it becomes less than –1 Vdc, the CONT. BRT will be therefore controlled so that this voltage will become –1 Vdc (constant). The output leve of IC901 (1/2) is set to lower than the CONTRAST voltage and therefore the OVERLOAD signal and therefore the OVERLOAD signal output from IC904 (1/2) becomes "High".

3. Control Circuit

The SUB CPU (IC902) performs serial communication with system controller using the three signals MISO, MOSI, and SCLK, and outputs the control signal according to the instructions of the system controller.

This IC also reads the adjustment data of the EEPROM (IC905) and outputs the adjustment voltage from the D/A converter (IC906 to IC911).

6-2. BC Board Descriptions

Carries out the switching of the switches on each board and setting of DAC data.

1. Serial Communication with Boards

The system control CPU (IC1) carries out serial communication with the SUB CPU of each board inserted in slots using the 4 signals-MISO, MOSI, SCLK and SLOT NO. It regularly receives abnormal detection signals from the power supply circuit and deflection circuit, and information (KILLER) for discriminating between color and black/white for signals input from each input adapter. It chooses who to communicate with using the signals SLOT-0 to SLOT-7.

2. Internal Signal Generation

IC104 to IC110 generates internal signals (PLUGE, 5STEP, WHITE, GRAY, CROSS HATCH). The clock generated by IC121 (525 mode:14.3181 MHz, 625 mode:14.1875 MHz) is input to IC120 (sync generator) to generate the sync signal.

3. Character Generator

IC7 (character generator) is controlled to display the menu, etc.

4. Parallel Remote Control

The input signal of CN5 (parallel remote control terminal) is read by IC5 (I/O PORT EXPANDER).

5. ISR Terminal

The CPU (IC1) carries out communication with the ISR devices via IC23 (serial control unit) and IC27 and IC28 (RS232C transceiver).

6. Serial Remote Terminal

The CPU (IC1) carries out communication with the remote devices via IC22 (serial control unit) and IC25 and IC26 (RS485 transceiver).

7. Communication with Control Block (HC Board)

The CPU (IC1) carries out communication with the control block (HC board) via IC14 (RS422 transceiver), receives key input information and the memory card reading data, and transmits LED light information and the memory card writing data.

6-3. E Board Descriptions

1. Horizontal System

1-1. H DELAY Circuit

IC621 is composed of the circuit generating the sawtooth signal which uses the H SYNC of the input signal as the trigger and the integral circuit. It outputs the signal obtained by adding the sawtooth signal and parabola signal which synchronize with the input signals. IC622 compares this signal with the reference voltage and outputs the rectangular wave. The falling edge is deviated by about 1/4 of the horizontal period from the input signal. Therefore in the H DELAY mode, the signals are synchronized after a delay of about 1/4 horizontal period.

1-2. AFC Circuit

IC001 is a CRT driver and performs RGB signal processing, sync and deflection signal processing.
This unit does not use a RGB signal processing circuit.
The AFC circuit of IC001 compares the phases of the H SYNC of the input signal input to pin ⑥ and the pulse of the horizontal deflection output input to pin ㊶. The error signal is passed through the low pass filter connected to pins ㊷, ㊹, ㊻, and ㊼ to control the frequency and phase of the ceramic oscillator connected to pin 44. The functions of IC001 consist of horizontal picture phase adjustment (H PHASE), horizontal picture size adjustment (H SIZE), horizontal pin distortion correction (H PIN), trapezoid distortion correction (H KEY), horizontal bow distortion correction (H BOW), and parallelogram distortion correction
(KEY BAL).

1-3. Horizontal Deflection Circuit

The H.DRIVE pulse is passed through Q053, T051 (HDT), supplied to Q054 (H.OUT) to switch Q504 and drive T5002 (HOT) and H.DY.
The power supply of the horizontal output circuit is generated by IC071 (RWM control) by switching Q061 to improve the power efficiency. The H PIN/W voltage from IC001 is input to IC701 to control the power voltage.

1-4. H Center Circuit

Positive and negative power supplies from the secondary side output of T052 (HOT:Horizontal output transformer) are generated as the power supply of the H center circuit. In the H center circuit (IC091, IC101, Q091, D103), the DC current flowing through the H.DY is controlled by the H.CENT signal from IC001.

1-5. Landing Circuit

The LANDING voltage output from the D/A converter of IC201 inside is input to IC231 to control the current flowing through the LANDING coil.

1-6. NTC Drive Circuit

The NTC signal output from IC201 is amplified by the IC801 to drive the NTC.

1-7. H Linearity Circuit

The H.LIN signal output from IC151 is amplified by Q151 to Q159, T151 (HLT) is driven, and the H linearity compensation current is passed through the H.DY.

1-8. Rotation Circuit (20-Inch Model)

The ROTATION voltage output from IC703 of the D/A converter is input to IC401 to control the current flowing through the ROTATION coil.

1-9. H Convergence Circuit (20-Inch Model)

The H.CONV correct signal output from IC701 is amplified by Q721 to Q729 to drive the CY (H).
The H.CONT correct signal output from IC701 is amplified by IC702 to drive the CY (V).

2. Vertical System

2-1. V DELAY Circuit

IC641 is composed of the circuit generating the sawtooth signal which uses the V SYNC of the input signal as the trigger and the amplifier circuit. It outputs the signal synchronized with the sawtooth signal. IC622 compares this signal with the reference voltage and outputs the rectangular wave. The falling edge is deviated by about 1/2 of the vertical period from the input signal. Therefore in the V DELAY mode, the signals are synchronized after a delay of about 1/2 vertical period.

2-2. V. OSC Circuit

The V OSC circuit of IC001 adopts the countdown method. It counts the horizontal pulses and resets using the V SYNC input to pin 5. Its functions consist of the vertical picture size adjustment (V SIZE), vertical picture position adjustment (V POSITION), vertical linearity correction (V LIN), and vertical linearity balance correction (V LIN BAL).

2-3. Vertical Deflection Circuit

The V SAW signal output from IC001 is input to IC301 via the buffer IC (IC091), and to drive the V.DY by IC301.

3. Protection Circuits

3-1. H.STOP, V.STOP Detection Circuit

The current flowing to the horizontal deflection york is converted to the parabola voltage of the horizontal period by C065. This parabola voltage is used to switch Q121. The C122 voltage charged by R122 is discharged in the horizontal period by Q121 so that it does not reach the voltage for turning on Q122. When an error occurs in the horizontal deflection circuit, the voltage of C122 is used to turn on Q122 since Q121 does not turn on. Q122 turns off IC503 and stops the high voltage generation circuit by setting pin 8 of IC503 to "Low".

The current flowing to the vertical deflection york is converted to the sawtooth voltage of the vertical period by R035. This sawtooth voltage is used to switch Q132, Hereafter the operations are the same as the horizontal block.

4. Correction Signal Generation Circuit

4-1. Convergence Correction Signal Generation Circuit

IC201 generates the convergence correction signal. It outputs the vertical convergence correction signal, horizontal convergence correction signal of the vertical period, H STAT adjustment voltage, landing adjustment voltage, and parabola signal of the vertical period.

IC202 and IC204 consist of the circuit generating the sawtooth signal of the horizontal period and the integral circuit. They output the sawtooth signal of the horizontal period, parabola signal, and sine signal.

IC701 is an integrated circuit consisting of a multiplier, signal switching circuit, and OP AMP amplifier. IC703 is DA converter which outputs the d.c. voltage. IC701 modulates the parabola signal of the horizontal period using the parabola signal of the vertical period, varies the level using the DAC output of IC703, and outputs the horizontal convergence correction signal of the horizontal period.

IC703 outputs the rotation adjustment voltage.

4-2. Horizontal Linearity Correction Signal, Dynamic Focus Signal Generation Circuit

IC151 and IC301 an integrated circuit consisting of a multiplier, signal switching circuit, and OP AMP amplifier. IC205 is a D/A converter which outputs d.c. voltage. IC301 varies the level of the parabola signal of the vertical period using the DAC output of IC205 and outputs the dynamic focus signal of the vertical period. It also modulates the parabola signal of the horizontal period using the parabola signal of the vertical period whose level has been varied using the DAC output of IC205 and the signal obtained by adding level using the DAC output of IC205, and outputs the dynamic focus signal of the horizontal period.

IC151 and IC301 adds the parabola signal of the horizontal period whose level was varied using the DAC output of IC205, the sine signal of the horizontal period whose level was varied using the DAC output of IC205, and the signal modulated by the parabola signal of the vertical period in which the level of the two signals was varied using the DAC output of IC205, and outputs the horizontal linearity signal.

5. Control Circuit

The SUB CPU (IC7001) performs serial communication with the system control CPU of the BC board using the three signals MISO, MOSI, and SCLK, and outputs the control signals POWER ON, DEGAUSE, AFC SW, H.DELAY, V.DELAY, etc. according to the instructions of the system control CPU (BC board IC1). It also reads the adjustment data of the EEPROM (IC7004) and output the adjustment voltage from the D/A converter (IC7005). In addition, it also controls the waveform output from IC112, IC115, and IC118 of the D board. The following protect detection signals are transmitted to the system control CPU from the SUB CPU.

H.STOP, V.STOP, +B.PROT, HV_OVP
IK_PROT, HV_OVP, G.PROT1 to 4

6. High Voltage Block

6-1. High Voltage Regulator Circuit

The high voltage regulator of this unit uses a DC converter type power supply circuit to reduce the power consumption. The following is an outline of the operations of the high voltage regulator.

The detection voltage which is obtained by resistance-dividing the HV voltage with the high voltage detection resistance HVR inside the FBT is passed through the IC501 (1/2) buffer and input to IC503. IC503 compares the reference voltage of IC502 and this detection voltage (difference amplification) and performs PWM modulation. Q551 is PWM-modulated and driven by the output of IC503. The voltage supplied to the FBT drive circuit (Q109, C108, C104, and FBT) is controlled by the ON/OFF of Q551.

Next, the current is supplied to the CRT, and if the HV voltage drops, the HV detection voltage also drops. As a result, the PWM output of IC503 works to expand the ON period of the Q551 switching FET.

The voltage switched by Q551 is passed through the combination choke L552 (LOT) and supplied to the converter circuit for driving FBT. As the PWM modulator is synchronized by the HV DRV pulse, the size of the drain current of the FET from Q555 of the FBT drive circuit depends on the ON period of Q551. Consequently, when the ON period of Q551 increases, the Q555 drain current increases and the C559 potential increases.

When Q555 turns OFF, the flyback pulse generated by the combined inductance of the LOT and FBT and the resonance of C108 and transmitted to the secondary side of the FBT to generate the HV voltage.

6-2. High Voltage Protector Circuit

HV is detected using the voltage of the HV.PROT winding, the tertiary winding of FBT.

The HV.PROT is connected to the ⊕ input terminal of IC531 (2/2) via D901 and R902 of the P board and the rectification circuit composed of C541.

When HV increases due to some error, fault, etc., the HV.PROT voltage drops. When the voltage of the ⊕ input terminal decreases below the ⊖ input terminal voltage, the protector operation reference voltage, the comparator output becomes “Low”, and turns OFF IC503via D545.

Consequently, the drive pulse of the high voltage converter is shut down and the high voltage output circuit stopped.

6-3. High Voltage Current Protector, ABL Circuit

The high voltage current protector holds down the high voltage regulator when the current Ik flowing through the CRT exceeds the setting value in errors and malfunctions.

The voltage obtained by resistance-dividing at R531 and R532 the difference between REF (IC502) and the V_{ABL1} obtained by voltage-converting the current flowing through the FBT secondary winding of the P board at R906 is supplied to the ⊕ terminal of the comparator, and the protector operating point voltage is supplied to the ⊖ pin of the comparator after resistance-separating VREF by R533 and R534.

The ⊕ terminal voltage of the comparator is normally higher than the ⊖ terminal voltage. When the CRT beam current increases, the V_{ABL1} voltage decreases and consequently the ⊕ terminal voltage of the comparator also decreases. Therefore when the beam current, which makes the ⊕ terminal voltage drop below the ⊖ terminal voltage, flows through the CRT, the protector operates and shuts down the PWM control IC DRIVE, and holds down the high voltage regulator.

The ABL circuit serves to protect the CRT by preventing the beam current from exceeding the reference value.

The beam current flowing through the CRT flows to R903 of the P board. V_{ABL2} is obtained by converting this current to voltage. V_{ABL2} is supplied to the ⊕ terminal of IC901, and when it drops below the reference voltage of the ⊖ terminal, ABL operates and makes the luminance consistent.

6-4. DF Drive Circuit

The DFX and DFY signal from the IC301 is amplified by Q301 to Q305 and T301 (DFX), and DFY is amplified by Q321 and Q322 to modulated the G4 and GM voltage of the CRT via the focus pack integrated with the FBT of the P board.

6-4. C Board Descriptions

1. Screen (G2) voltage regulator

The G2 regulator circuit composed of IC601 (1/2), Q601 and Q602 is controlled by the G2 control voltage from the BK board and supplies the G2 voltage which optimizes the CRT cathode voltage. This board uses a high voltage obtained by rectifying the drain pulse voltage of Q555 of the E board at D555 and C558.

2. Blanking Circuit

The blanking signal from the BK board is amplified by IC701, clamped to –12V by D501, and supplied to G1 of the CRT.

6-5. Power Supply Circuit Descriptions (G Board)

The power supply of this unit is composed of the following three switching regulators.

1. Power-factor correction regulator for conforming to the power supply harmonic regulation
2. LOW-B regulator for supplying the voltage required by the processing circuits of the signal block and deflection/high voltage blocks mainly
3. HIGH-B regulator for supplying voltage required by the output circuits of the deflection/high voltage blocks

1. Power-factor correction block

The power-factor correction circuit (hereafter referred to as PFC) is composed of T3, IC31, Q31, D36, C43, and related parts.

The power-factor correction circuit of this power supply adopts the boost PWM control method. In the basic operations, the output voltage Vpfc is made higher than the peak value of the input power supply voltage at all times by the boost type switching regulator which performs continuous current operations. Unlike the normal regulator, as the input voltage is a sine wave, voltage control and current control proportionate to this are performed. Consequently, IC31 which PWM controls PFC not only makes the Vpfc voltage constant but also PWM controls Q31 which is the FET for PFC OUT so that the current flowing to T3 (input power supply current waveform) becomes the same as the input power supply voltage waveform.

As the waveforms of the input voltage and current become similar, the power-factor is improved.

2. LOW-B Regulator

The power supply for LOW-B is mainly composed of IC201, IC203, PH201, Q205, T201, and T201 secondary rectification circuits.

IC201 which is a PWM control IC is added with the control voltage from IC203 which performs constant voltage control of the +15V line via the isolater PH201. The Q205 FET which is the output from the converter is switched by the pulse PWM controlled by IC201 via the Q203 and Q204 buffers. As a result, at the secondary side of T201, +7V for the standby +5V and +6V/–6V/+15V/–15V which are required by each board are generated.

The standby +5V voltage is generated by IC202 which is an error amplifier and Q207 which is a pass transistor. The power supply voltage lines supplied to each board are incorporated with transistor switches to reduce power consumption during standby.

3. HIGH-B Regulator

The HIGH-B power supply is composed of IC301, IC302, PH301, PH801, Q305, T301, and T301 secondary rectification circuits.

Like the LOW-B power supply, IC301 which is a PWM control IC is added with the control voltage by IC302 performing constant voltage control of the +120V line via the isolater PH301. Q305 FET which is a converter out is switched by the PWM controlled pulse by IC301 via the Q303 and Q304 buffers. As a result, +120V used for the voltage for the CRT heater and voltage used by the deflection/high voltage output blocks are generated.

4. Protection Circuits

4-1. PFC Over-voltage Protection (OVP) Circuit

This circuit is composed of IC101 (1/2), Q105, Q106, and the Vpfc voltage detector (R53 to R57). When the Vpfc voltage rises abnormally due to malfunctions of the feedback block for Vpfc voltage control, it stops PFC operations. IC101 (1/2) which is the detector observes the voltage obtained by resistance-dividing the Vpfc voltage at a certain percentage. When the Vpfc voltage rises in malfunctions, exceeds the reference voltage set, it sets the output to HI. As a result, the latch output composed of Q105 and Q106 is passed through D102 to set the ENABLE terminal of IC31 to "Low" and stops the PFC operations.

At the same time, D103 (red LED) is lit to inform of the error.

4-2. LOW-B Power Supply Protection Circuit

The protection circuit of this power supply is composed of the power supply circuit for IC201 composed of Q4, Q5, Q6, IC1, PH901, Q802, Q817, etc. and the following detection circuit.

The detection circuit detects the over-voltage of the standby +5V and +15V lines. The OVP circuit of the standby +5V is composed of the reference voltage IC802, detector IC801 (2/4) and switch Q801 while the +15V line OVP circuit is composed of the detector IC804. The protection circuit operates when the power supply voltage to IC201 PWM controlled is stopped.

Specifically, when the +15V voltage rises due to an error of the voltage feedback block, and the value determined by the percentages of R825 and R826 is exceeded, the output of IC804 becomes "Low", and Q816 is turned OFF via D810, to turn OFF the transistor in PH803. As a result, Q4 and Q5 turn ON, Q6 goes OFF so that no power supply voltage is supplied to IC201 and PWM operations stop.

When the OVP circuit of the standby +5V works, Q802 is turned OFF and the same operations are performed. At the same time, D4 (red LED) is lit to in form of the error.

4-3. HIGH-B Power Supply Protection Circuit

The protection circuit of this power supply is composed of the PWM control pulse shut-off circuit composed of Q300, Q301, PH802, Q814, Q815, etc. and the following detection block.

The detection circuit is composed of the +120V OVP and OCP (over-current). The OVP circuit is composed of the detection block IC801 (3/4), and latch block Q806 and Q807, while the OCP circuit is composed of the detector IC801 (4/4), latch block Q809 and Q810. The reference voltage used is shared with IC802.

Taking the OCP circuit as an example to describe the circuit operations, when the +120V current increases due to load problems, etc., the voltage of the R339 current-voltage conversion resistor also drops significantly, and the voltage value observed by IC801 (4/4) also drops.

When the voltage value drops below the value obtained by resistance-dividing by R819 and R820, the detector IC801 (4/4) output becomes "High", turns ON the Q809 and Q810 latch via D810, and turns ON Q815 to turn OFF the transistor in PH802. As a result, Q301 is turned ON by the current from R290, Q300 turns ON, and the Vref voltage (5V) (voltage of pin ⑭) is input to pin ④ of the PWM control IC301 via D300. pin ④ of IC301 performs duty limitation of the output pulse. When voltages above 3V are supplied, the output pulse is shut-off.

Therefore, the power supply is stopped by shutting-off the PWM output pulse.

When the OVP circuit operates, the output of IC801 (3/4) becomes "High" and the same operations are performed again.

6-6. Control Unit Descriptions
(BVM-14G5, BKM-10R)

- **HC Board**

1. Key Scan, LED Lighting

The SUB CPU (IC1) transmits the LED lighting signal and key scanning output signal to the HA board and HB board using the serial signals (MISO, MOSI, SCLK), and receives the key scanning input signals.

2. Memory Card

The SUB CPU (IC1) reads/writes the data (adjustment data, etc.) from/on the memory card connected to CN1.

SECTION 7
SEMICONDUCTORS

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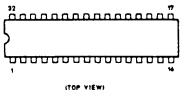

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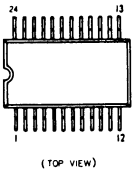

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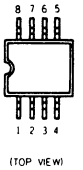

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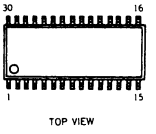

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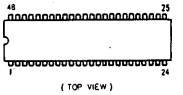

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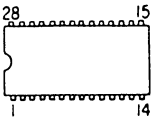

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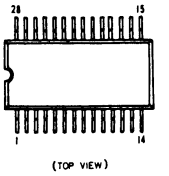

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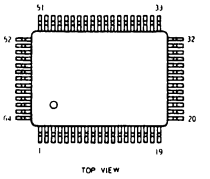

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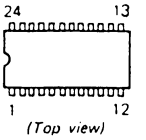

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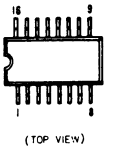

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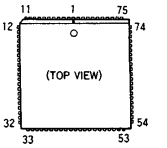

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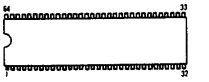

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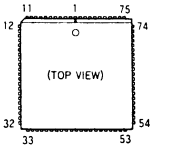

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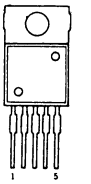

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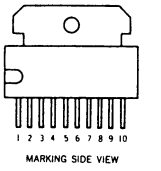

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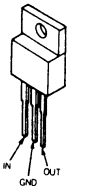

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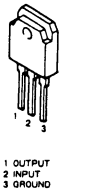

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TC74HC03AF(EL)
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TC74VHC02F(EL)
TC74VHC04F(EL)
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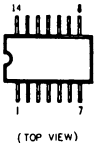

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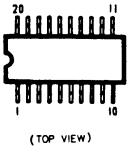

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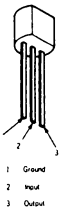

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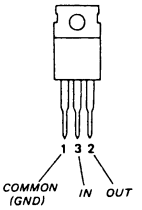
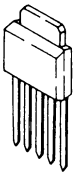


PQ12TZ5U



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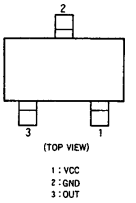

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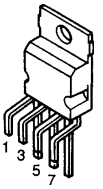

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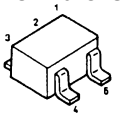
TC7S02FU(TE85R)
TC7S32FU(TE85R)
TC7S86F(TE85R)
TC7W078FU(TE12R)



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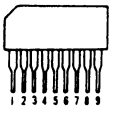
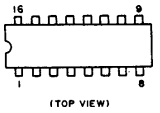
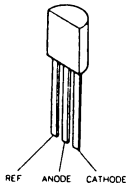


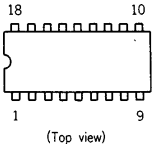
TK83854D



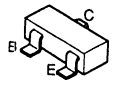
TL431CLP-Z



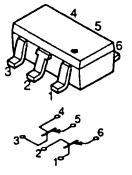
Z8622812PSC



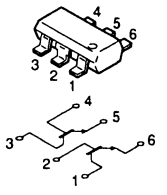
DTA124EKA-T146
DTC144EK-T146
DTC144EKA-T146
2SA1037K-T-146-QR
2SA133B-5-TB
2SA1462-T1Y33Y34
2SC1654-T1N5
2SC2412K-T-146-QR
2SC3326N-TE85L-AB
2SC3392-5-TB
2SC3545-T1T43T44
2SC3837KT146Q



IMT2-T109



IMX2-T109



IRFI9630GS-LF
IRFI9680GS
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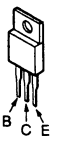
2SA1606-E
2SB1261-K
2SB1565EF
2SC3746
2SC4159-E
2SC4686A(LBSONY)
2SD2394-EF



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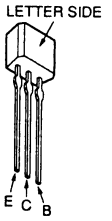
2SA1413-K



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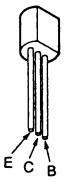
2SC2362KG-AA



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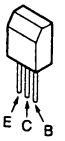
2SC2958-TL



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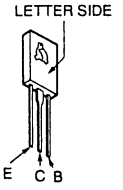
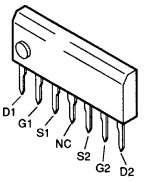
2SC3840K



2SC4927-01



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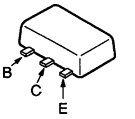

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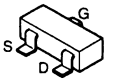

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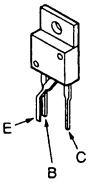
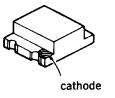
2SK2655-01R-F165
2SK2766-01R-F165



CL-155Y/PG-CD-TL



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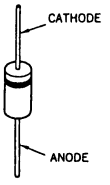
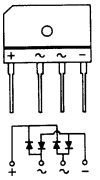
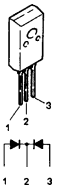


D4SB60L



D5LC20U
D5SC4M



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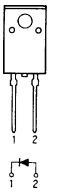

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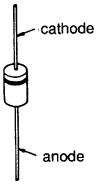
ERC91-02TP11
RGP15K-6179G23



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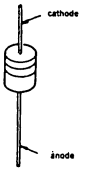
RD20ES-T1B1
RD24ES-T1B1
1SS119-25TD



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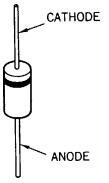
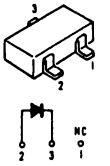
RD24SB-T1
RGP02-20EL-6394



HSM83-TL
RD6.8M-T1B1
RD7.5M-T1B2
RD22M-T1B3



MA111-TX
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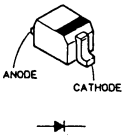
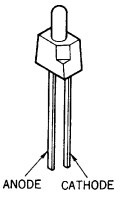
RD4.3SB3-T1
RD5.6SB-T1
RD6.2SB-T1
RD12SB-T1
RD12SB2-T1
RD12SB3-T1
RD15SB-T1



SLR-325DCT31
SLR-325MCT31



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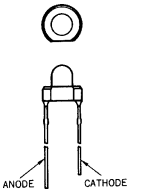
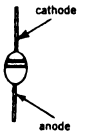


V19E-T52



SECTION 8
EXPLODED VIEWS

NOTE :

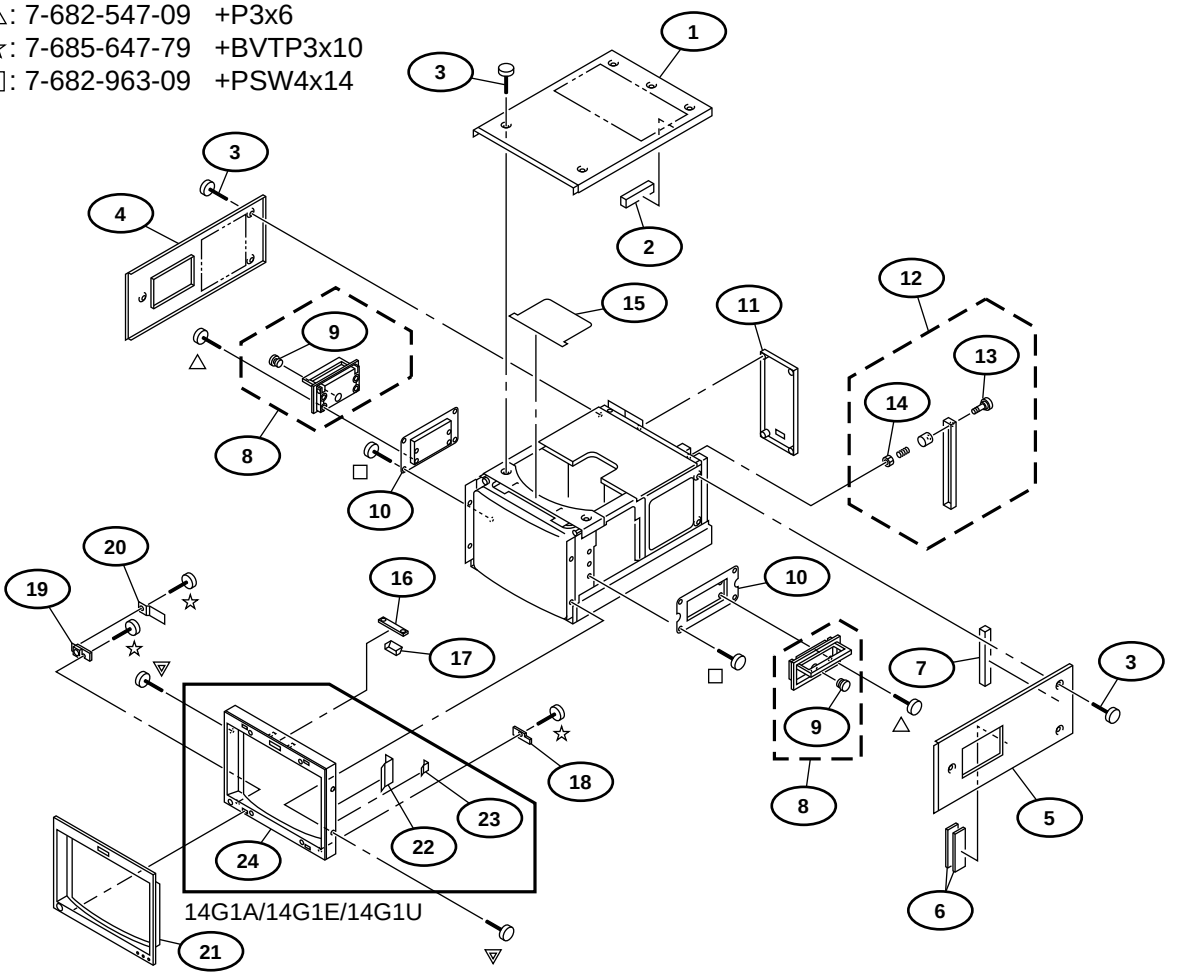
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remarks column.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified marked ⚠ are critical for safety.
Replace only with the part number specified.

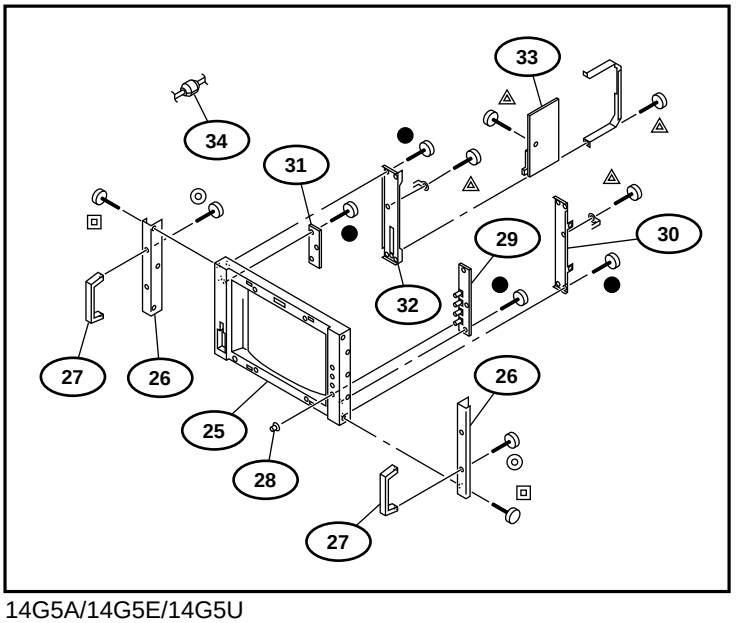
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

8-1. BEZEL, CABINET (14G1A/14G1E/14G1U/14G5A/14G5E/14G5U)

●: 7-685-648-79 +BVTP3x12
⧋: 7-682-947-01 +PSW3x6
▽: 7-682-561-09 +B4x8
◎: 7-628-000-04 +PS5x14
□: 7-682-161-01 +P4x8
△: 7-682-547-09 +P3x6
☆: 7-685-647-79 +BVTP3x10
⧈: 7-682-963-09 +PSW4x14



14G1A/14G1E/14G1U

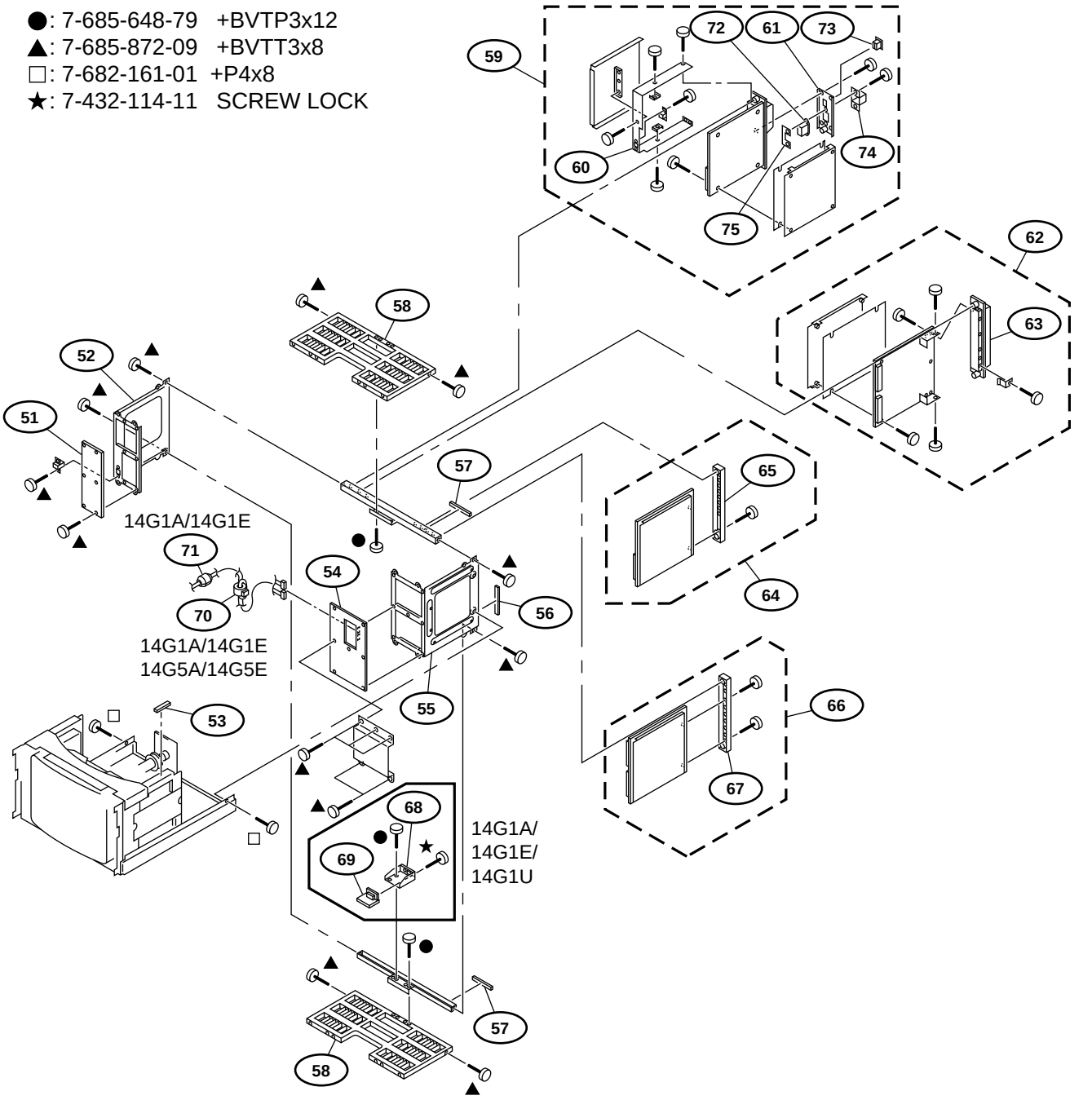


14G5A/14G5E/14G5U

REF NO.		PART NO.	DESCRIPTION	REMARK
1		4-050-931-01	CABINET (UPPER)(14G5)	
1		4-050-967-01	CABINET (UPPER)(14G1)	
2	*	4-053-287-11	GASKET	
3		4-063-969-01	SCREW (OS), CASE, CLAW	
4		4-050-933-01	CABINET (LEFT)	
5		4-050-932-01	CABINET (RIGHT)	
6	*	4-053-255-01	GASKET (S), EMI	
7	*	4-053-254-01	GASKET (L), EMI	
8		X-3642-018-3	HANDLE ASSY	9
9	*	3-642-047-01	STOP, HANDLE	
10	*	4-050-928-01	BRACKET, HANDLE	
11	*	X-4035-465-1	PANEL ASSY, REAR (14G1)	
11	*	X-4035-466-2	PANEL ASSY, REAR (14G5)	
12	*	X-4033-104-1	PANEL ASSY, BLANK	13,14
13	*	4-050-804-01	SCREW, PANEL STOPPER	
14	*	3-648-057-00	NUT (ISO-4), U	
15	*	4-050-913-01	INSULATOR (ANODE)	
16	*	A-1373-641-A	YA MOUNT	
17	*	4-050-876-01	PLATE, LIGHT INTERCEPTION	
18	*	A-1373-638-A	YB MOUNTED (14G1)	
18	*	A-1373-661-A	YB MOUNT (14G5)	
19	*	A-1373-636-A	YC MOUNTED (14G1)	
19	*	A-1373-643-A	YC MOUNT (14G5)	
20	*	4-061-920-01	INSULATOR, YC	
21		X-4033-128-1	MASK (4:3) ASSY	
22	*	X-4033-276-1	GUARD ASSY, HARNESS(L)(14G1)	
23	*	X-4033-277-1	GUARD ASSY, HARNESS(S)(14G1)	
24		X-4033-145-1	BEZEL ASSY (14G1)	
25		X-4033-130-1	BEZEL ASSY (14G5)	
26		4-050-922-01	BASE, HANDLE (14G5)	
27	*	4-337-212-11	HANDLE (14G5)	
28		4-050-851-01	KNOB, CONTROL (14G5)	
29	*	A-1372-133-A	MOUNTED PWB, HA (14G5)	
30	*	4-050-925-01	BRACKET (RIGHT), BEZEL (14G5)	
31	*	A-1372-134-A	MOUNTED PWB, HB (14G5)	
32	*	4-050-924-01	BRACKET (LEFT), BEZEL (14G5)	
33	*	A-1375-155-A	HC COMPLETE PWB (14G5)	
34		1-500-249-11	BEAD, FERRITE (CASE)(14G5)	

8-2. CARD SLOT (14G1A/14G1E/14G1U/14G5A/14G5E/14G5U)

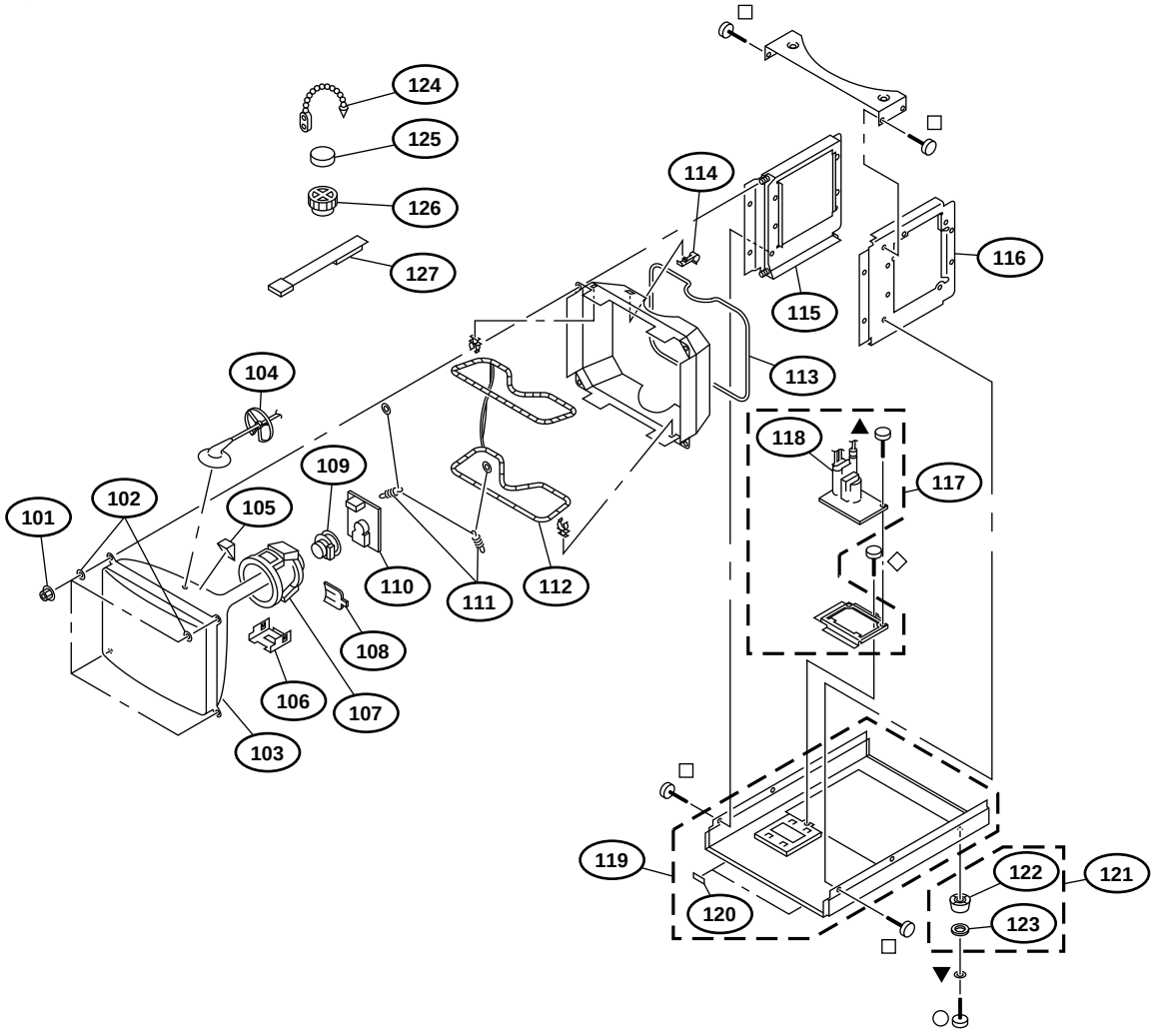
●: 7-685-648-79 +BVTP3x12
▲: 7-685-872-09 +BVTT3x8
□: 7-682-161-01 +P4x8
★: 7-432-114-11 SCREW LOCK



REF NO.		PART NO.	DESCRIPTION	REMARK
51	*	A-1390-771-A	TA MOUNT	
52	*	4-050-965-01	BRACKET (L), T	
53	*	4-053-287-21	GASKET	
54	*	A-1390-772-A	TB MOUNT	
55	*	4-050-964-01	BRACKET (R), T	
56	*	4-053-287-01	GASKET	
57	*	4-053-287-11	GASKET	
58		4-050-969-01	BOARD, CARD SLOT (14G1)	
58	*	4-050-844-01	BOARD, CARD SLOT (14G5)	
59	*	A-1316-334-A	G COMPL	60,61,72-75
60	*	X-4033-116-1	FRAME ASSY, POWER	
61		X-4033-109-6	PANEL ASSY, POWER UNIT	
62	*	A-1346-666-A	E COMPL	63
63	*	X-4033-108-1	HEAT SINK ASSY, DEF	
64	*	A-1135-941-A	BK COMPL	65
65	*	X-4033-105-1	PANEL (BK) ASSY, CONNECTOR	
66	*	A-1135-920-A	BC COMPL	67
67	*	X-4033-106-2	PANEL (BC) ASSY, CONNECTOR	
68	*	4-050-816-01	BRACKET, HD (14G1)	
69	*	A-1372-136-A	MOUNTED PWB, HD (14G1)	
70		1-500-278-11	FILTER, CLAMP (FERRITE CORE) (14G1A/14G1E/14G5A/14G5E)	
71		1-500-249-11	BEAD, FERRITE (CASE) (14G1A/14G1E)	
72	⚠	1-251-263-11	INLET, AC	
73	⚠	1-762-300-11	SWITCH, AC POWER SEESAW	
74		2-990-241-02	HOLDER, PLUG A	
75		4-050-798-01	PLATE, NUT, AC INLET	

8-3. PICTURE TUBE (14G1A/14G1E/14G1U/14G5A/14G5E/14G5U)

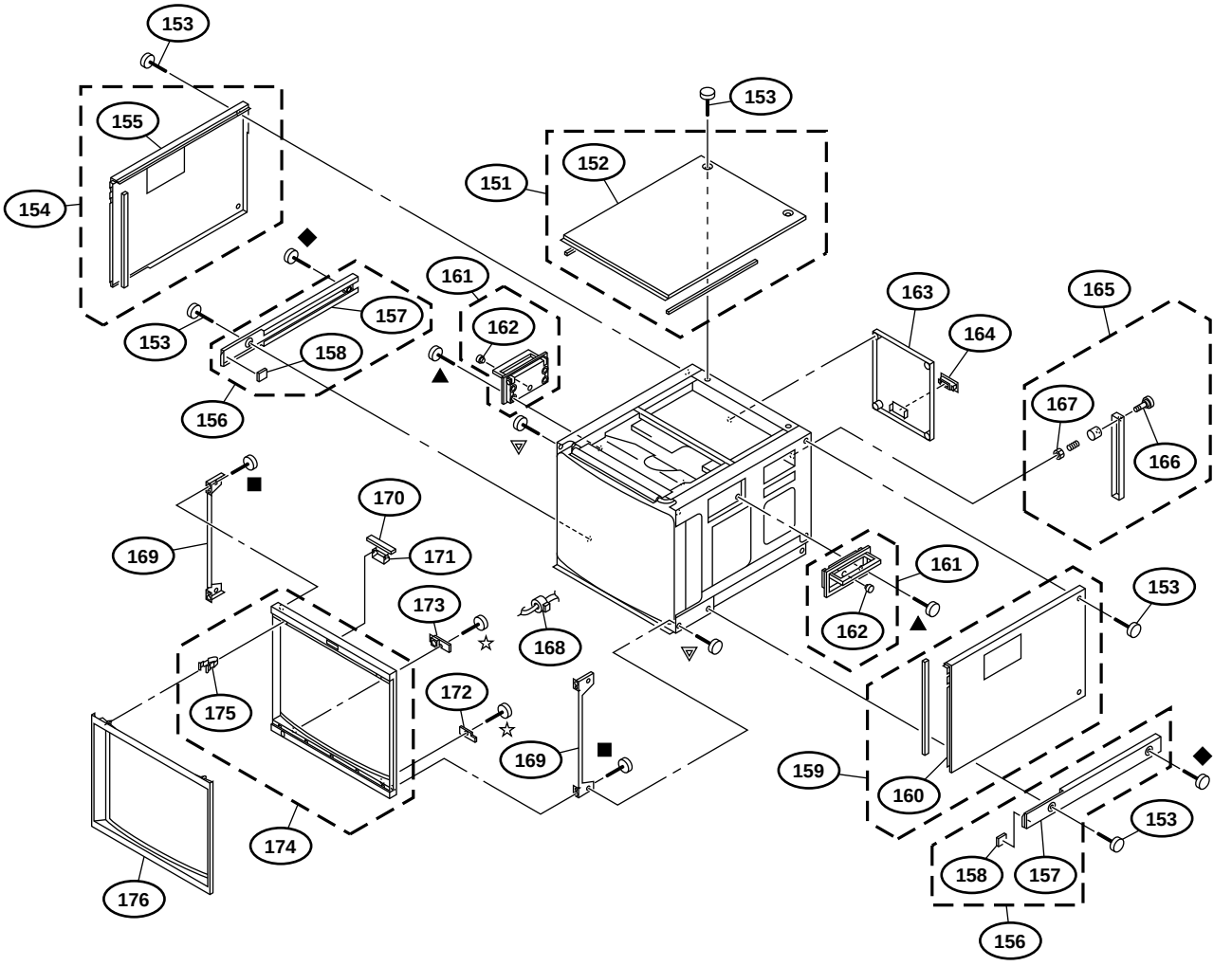
○: 7-682-564-09 +P4x14
▲: 7-685-872-09 +BVTT3x8
□: 7-682-161-01 +P4x8
◇: 7-682-661-01 +PS4x8
▼: 7-688-004-02 W4



REF NO.			PART NO.	DESCRIPTION	REMARK
101			4-306-034-00	NUT,(B) (M5), FLANGE	
102			4-348-567-00	WASHER, CRT POSITION	
103	⚠		8-738-333-05	PICTURE TUBE 14MT1 (14G1A/14G1E/14G5A/14G5E)	
103	⚠		8-738-335-05	PICTURE TUBE 14MT3 (14G1U/14G5U)	
104		*	4-047-349-01	HOLDER, HV CABLE	
105			4-050-492-01	SPACER, DY	
106			4-053-410-01	SHIELD, DY	
107	⚠		8-451-473-11	DYY14MPDT	
108			X-2105-533-1	PLATE ASSY, CORRECTION, TLH	
109	⚠		1-452-436-41	NECK ASSY, CRT (NA292)	
110		*	A-1331-724-A	C MOUNT	
111			4-303-774-XX	SPRING	
112	⚠		1-411-660-21	COIL, DEMAGNETIC	
113	⚠		1-411-658-21	COIL, LANDING CORRECTION	
114			4-063-324-01	HOLDER, LCC	
115			4-063-789-01	CHASSIS (L)(14G1)	
115		*	4-063-787-01	CHASSIS (L)(14G5)	
116			4-050-926-01	CHASSIS (R)(14G5)	
116			4-050-962-01	CHASSIS (R)(14G1)	
117		*	A-1482-705-A	FBT BLOCK ASSY	118
118	⚠		X-4035-494-1	FBT ASSY NX-4141//J1F4	
119		*	X-4035-463-1	CHASSIS ASSY, BOTTOM (14G5)	
119		*	X-4035-464-1	CHASSIS ASSY, BOTTOM (14G1)	120
120			3-831-441-99	CUSHION, SPEAKER	
121			X-4033-117-1	FOOT ASSY	122,123
122			X-4836-202-9	FOOT	
123		*	3-668-845-01	CUSHION, LEG	
124			4-308-870-00	CLIP, LEAD WIRE	
125			1-452-032-00	MAGNET,DISC:10MMϕ	
126			1-452-094-00	MAGNET, ROTATABLE DISK:15MMϕ	
127			4-051-735-22	PIECE A(75), CONV. CORRECT	

8-4. BEZEL, CABINET (20G1A/20G1E/20G1U)

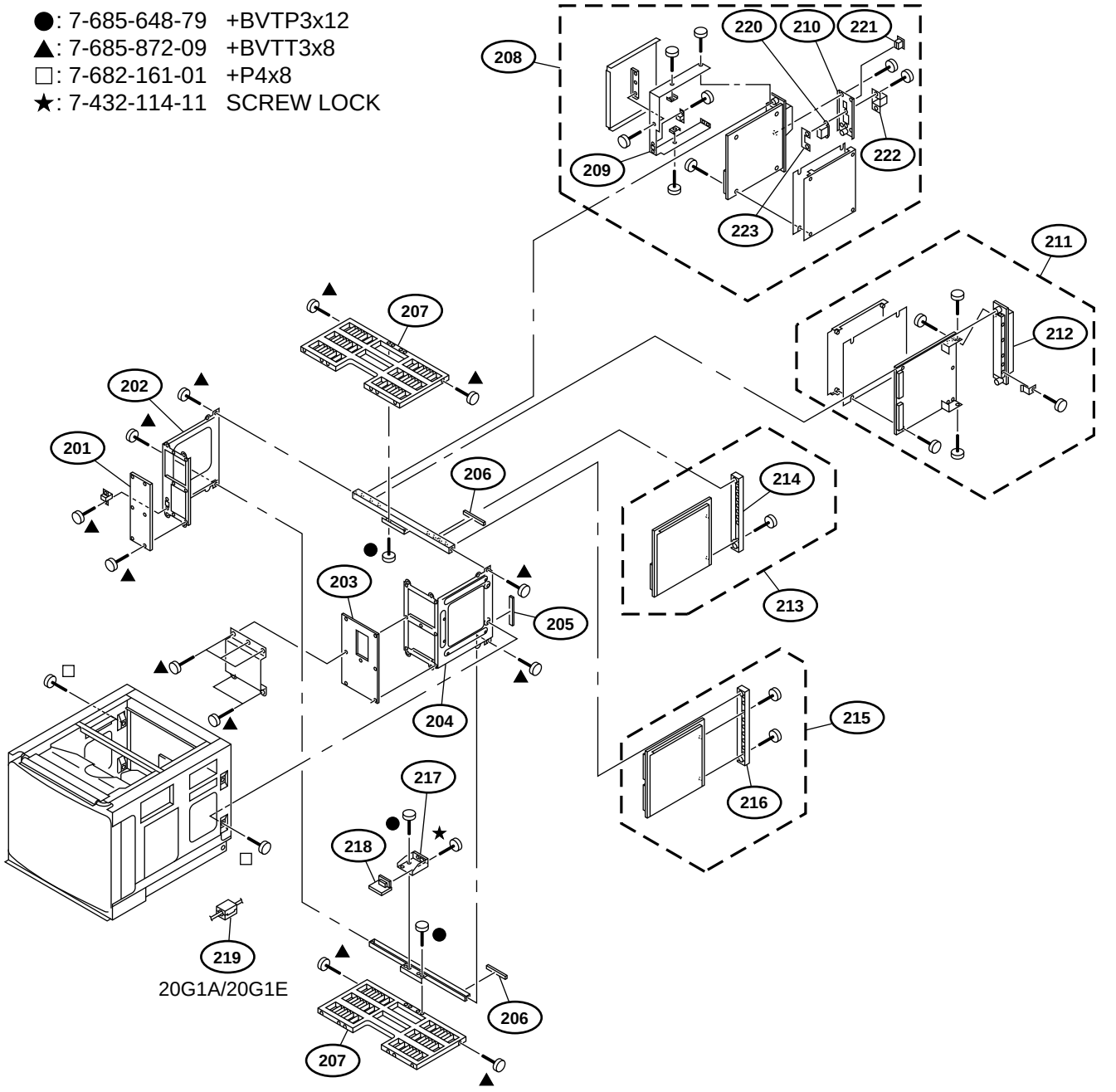
◆: 7-682-566-04 +B4x20
■: 7-685-661-14 +BVTP4x12
☆: 7-685-647-79 +BVTP3x10
▲: 7-685-872-09 +BVTT3x8
▽: 7-682-561-09 +B4x8



REF NO.		PART NO.	DESCRIPTION	REMARK
151		X-4033-308-1	CABINET ASSY, TOP	152
152		4-050-837-01	CABINET, TOP	
153		4-063-969-01	SCREW (OS), CASE, CLAW	
154		X-4033-310-1	CABINET ASSY, LEFT	155
155		4-050-840-01	CABINET, LEFT	
156	*	X-4033-324-2	BLIND COVER ASSY	157,158
157		4-050-836-01	COVER, BLIND	
158	*	3-342-839-02	CUSHION	
159		X-4033-309-1	CABINET ASSY, RIGHT	160
160		4-050-841-01	CABINET, RIGHT	
161		X-3642-018-3	HANDLE ASSY	162
162	*	3-642-047-01	STOP, HANDLE	
163	*	X-4035-466-1	PANEL ASSY, REAR	
164		4-050-821-01	ESCUTCHEON	
165	*	X-4033-104-1	PANEL ASSY, BLANK	166,167
166	*	4-050-804-01	SCREW, PANEL STOPPER	
167		3-648-057-00	NUT (ISO-4), U	
168		1-500-278-11	FILTER, CLAMP (FERRITE CORE)	
169	*	4-050-830-01	BRACKET, BEZEL	
170	*	A-1373-641-A	YA MOUNT	
171	*	4-050-876-01	PLATE, LIGHT INTERCEPTION	
172	*	A-1373-642-A	YB MOUNT	
173	*	A-1373-643-A	YC MOUNT	
174		X-4033-111-1	BEZEL ASSY	175
175		4-051-061-02	HOLDER, MASK	
176		X-4033-112-1	MASK (4:3) ASSY	

8-5. CARD SLOT (20G1A/20G1E/20G1U)

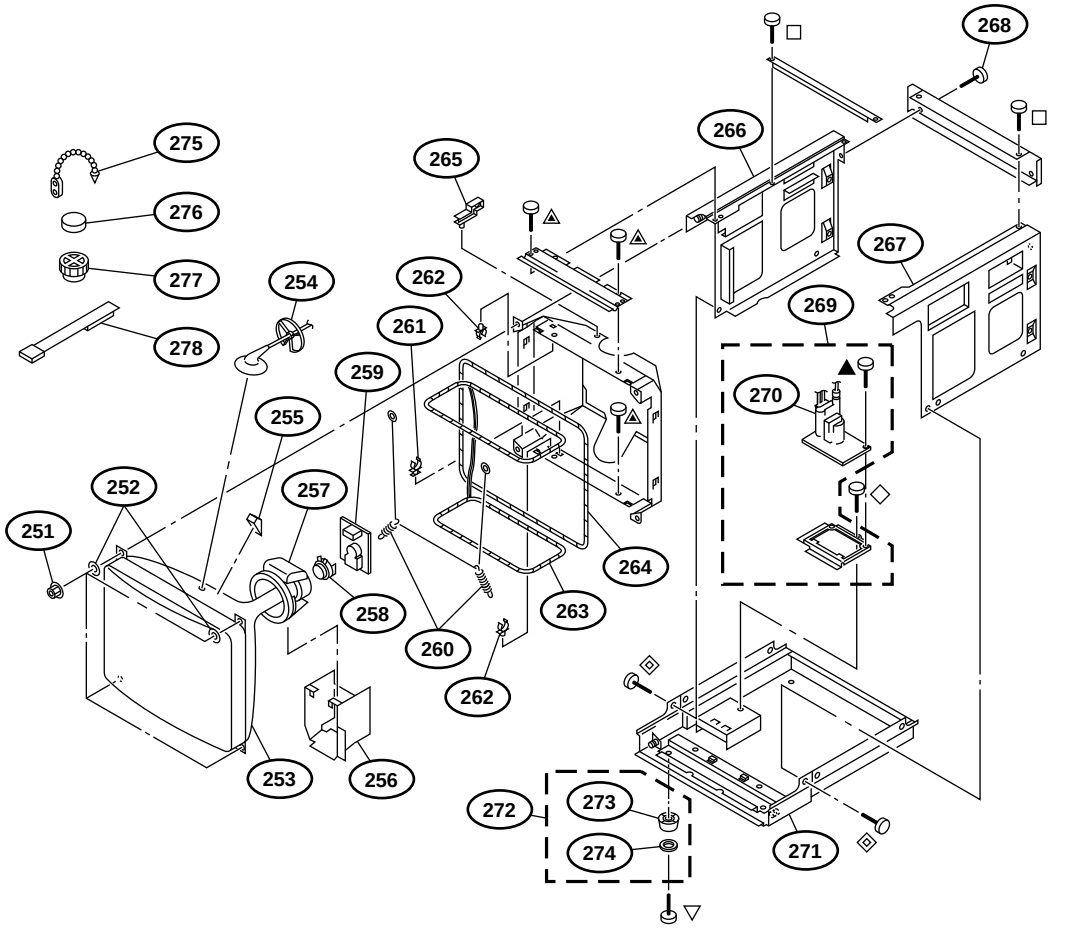
●: 7-685-648-79 +BVTP3x12
▲: 7-685-872-09 +BVTT3x8
□: 7-682-161-01 +P4x8
★: 7-432-114-11 SCREW LOCK



REF NO.		PART NO.	DESCRIPTION	REMARK
201	*	A-1390-771-A	TA MOUNT	
202	*	4-050-965-01	BRACKET (L), T	
203	*	A-1390-772-A	TB MOUNT	
204	*	4-050-964-01	BRACKET (R), T	
205	*	4-053-287-01	GASKET	
206	*	4-053-287-11	GASKET	
207	*	4-050-844-01	BOARD, CARD SLOT	
208	*	A-1316-334-A	G COMPL	209,210,220-223
209	*	X-4033-116-1	FRAME ASSY, POWER	
210		X-4033-109-6	PANEL ASSY, POWER UNIT	
211	*	A-1346-667-A	E COMPL	212
212	*	X-4033-108-1	HEAT SINK ASSY, DEF	
213	*	A-1135-921-A	BK COMPL	214
214	*	X-4033-105-1	PANEL (BK) ASSY, CONNECTOR	
215	*	A-1135-920-A	BC COMPL	216
216	*	X-4033-106-2	PANEL (BC) ASSY, CONNECTOR	
217	*	4-050-816-01	BRACKET, HD	
218	*	A-1372-136-A	MOUNTED PWB, HD	
219		1-543-653-11	CORE ASSY, BEAD(DIVISION TYPE)(20G1A/20G1E)	
220	⚠	1-251-263-11	INLET, AC	
221	⚠	1-762-300-11	SWITCH, AC POWER, SEESAW	
222		2-990-241-02	HOLDER, PLUG A	
223		4-050-798-01	PLATE, NUT, AC INLET	

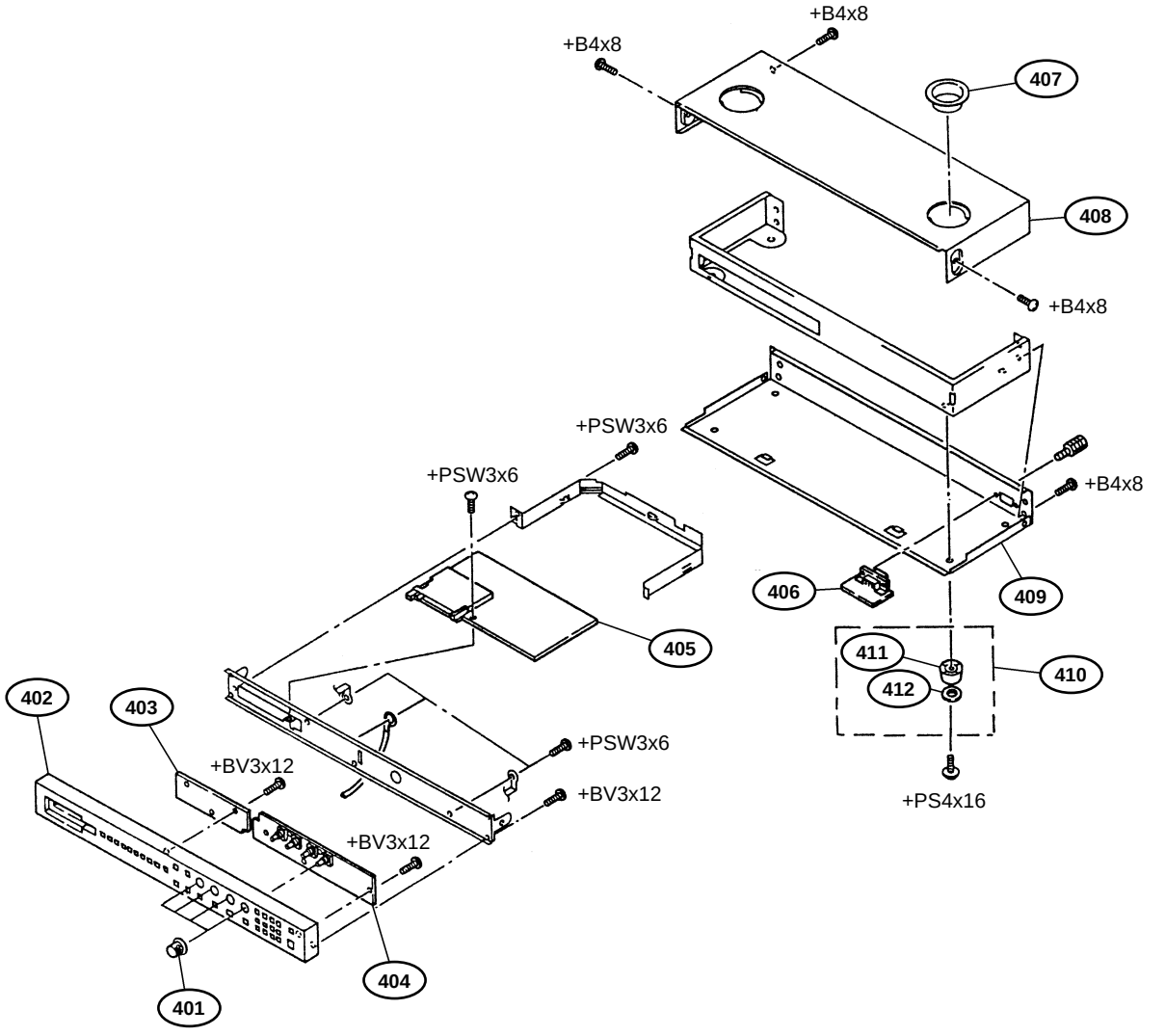
8-6. PICTURE TUBE (20G1A/20G1E/20G1U)

▲: 7-685-872-09 +BVTT3x8
□: 7-682-161-01 +P4x8
◇: 7-682-661-01 +PS4x8
◈: 7-682-261-09 +K4x8
▽: 7-682-665-09 +PS4x16
◬: 7-685-881-09 +BVTT4x8



REF NO.			PART NO.	DESCRIPTION	REMARK
251			4-306-034-00	NUT,(B) (M5), FLANGE	
252			4-348-567-00	WASHER, CRT POSITION	
253	⚠		8-736-378-05	PICTURE TUBE 20MT1 (20G1E)	
253	⚠		8-736-380-05	PICTURE TUBE 20MT3 (20G1U)	
253	⚠		8-736-388-05	PICTURE TUBE 20MT1(S) (20G1A)	
254		*	4-047-349-01	HOLDER, HV CABLE	
255		*	4-040-897-01	SPACER, DY	
256		*	X-4033-336-3	SHIELD ASSY, DY	
257	⚠		8-451-470-13	DY Y20MPD-M	
258	⚠		8-453-003-11	NA3012(M)	
259		*	A-1331-724-A	C MOUNT	
260			4-303-774-XX	SPRING	
261			4-316-015-00	HOLDER, WIRE	
262			4-041-021-02	HOLDER, DEGAUSE COIL	
263	⚠		1-411-659-21	COIL, DEMAGNETIC:10MMϕ	
264	⚠		1-411-657-21	COIL, LANDING CORRECTION	
265		*	4-387-284-01	HOLDER, LEAD	
266		*	X-4035-467-1	CHASSIS ASSY, LEFT	
267		*	X-4033-115-1	CHASSIS ASSY, RIGHT	
268			4-063-969-01	SCREW (OS), CASE, CLAW	
269		*	A-1482-707-A	FBT BLOCK ASSY	270
270	⚠		X-4035-493-1	FBT ASSY NX-4141//J1E4	
271		*	X-4033-113-1	PLATE ASSY, BOTTOM	
272			X-4033-117-1	FOOT ASSY	273,274
273			X-4836-202-9	FOOT	
274		*	3-668-845-01	CUSHION, LEG	
275			4-308-870-00	CLIP, LERD WIRE	
276			1-452-032-00	MAGNET,DISC	
277			1-452-094-00	MAGNET, ROTATABLE DISK:15MMϕ	
278			4-051-736-21	PIECE A(90), CONV. CORRECT	

8-7. CONTROL UNIT (BKM-10R)



REF NO.		PART NO.	DESCRIPTION	REMARK
401		4-050-851-01	KNOB, CONTROL	
402		X-4033-118-1	PANEL ASSY, CONTROL	
403	*	A-1372-134-A	HB MOUNTED PWB	
404	*	A-1372-133-A	HA MOUNTED PWB	
405	*	A-1375-149-A	HC COMPLETE PWB	
406	*	A-1372-136-A	HD MOUNTED PWB	

REF NO.		PART NO.	DESCRIPTION	REMARK
407		4-050-852-01	HOLDER, FOOT	
408		4-050-858-01	COVER (TOP)	
409		4-050-857-01	COVER (BOTTOM)	
410		X-4033-117-1	FOOT ASSY	411,412
411		X-4836-202-9	FOOT	
412	*	3-668-845-01	CUSHION, LEG	

SECTION 9
ELECTRICAL PARTS LIST

BC

The components identified marked ⚠ are critical for safety.
Replace only with the part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS
- All resistors are in ohms
- F : nonflammable

CAPACITORS
- PF : μμF

When indicating parts by reference number, please include the board name.

- There are some cases the reference number on one board overlaps on the other board. Therefore, when ordering parts by the reference number, please include the board name.

REF NO.	PART NO.	DESCRIPTION			REMARK
	* A-1135-920-A	BC COMPL			
		**********			
	* X-4033-106-1	PANEL (BC) ASSY, CONNECTOR			
	* 1-526-659-00	SOCKET, IC (DP) 28P			
	* 1-526-660-21	SOCKET, IC (DP) 32P			
	1-540-222-11	SOCKET, IC (PCC PACKAGE) 84P			
	1-550-104-11	HOLDER, BATTERY			
	* 3-648-057-00	NUT (ISO-4), U			
	* 4-050-804-01	SCREW, PANEL STOPPER			
	* 4-050-814-01	SHIELD, PWB			
	* 4-057-770-01	INSULATOR			
	7-432-114-11	SCREW LOCK			
	7-623-422-07	LW 3, TYPE B			
	7-685-871-01	SCREW +BVTT 3X6 (S)			
	7-685-872-09	SCREW +BVTT 3X8 (S)			
		<CAPACITOR>			
C1	1-163-235-11	CERAMIC CHIP	22PF	5% 50V	
C2	1-163-227-11	CERAMIC CHIP	10PF	0.5PF 50V	
C3	1-163-235-11	CERAMIC CHIP	22PF	5% 50V	
C4	1-163-235-11	CERAMIC CHIP	22PF	5% 50V	
C5	1-126-396-11	ELECT CHIP	47MF	20% 16V	
C7	1-163-031-11	CERAMIC CHIP	0.01MF	50V	
C8	1-163-031-11	CERAMIC CHIP	0.01MF	50V	
C9	1-163-031-11	CERAMIC CHIP	0.01MF	50V	
C10	1-163-275-11	CERAMIC CHIP	0.001MF	5% 50V	
C11	1-163-275-11	CERAMIC CHIP	0.001MF	5% 50V	
C12	1-163-031-11	CERAMIC CHIP	0.01MF	50V	
C31	1-163-038-11	CERAMIC CHIP	0.1MF	25V	
C32	1-163-038-11	CERAMIC CHIP	0.1MF	25V	
C33	1-163-038-11	CERAMIC CHIP	0.1MF	25V	
C34	1-163-038-11	CERAMIC CHIP	0.1MF	25V	
C35	1-163-038-11	CERAMIC CHIP	0.1MF	25V	
C36	1-163-038-11	CERAMIC CHIP	0.1MF	25V	
C37	1-163-038-11	CERAMIC CHIP	0.1MF	25V	
C39	1-163-038-11	CERAMIC CHIP	0.1MF	25V	
C41	1-163-038-11	CERAMIC CHIP	0.1MF	25V	
C42	1-163-038-11	CERAMIC CHIP	0.1MF	25V	
C43	1-163-038-11	CERAMIC CHIP	0.1MF	25V	
C44	1-163-038-11	CERAMIC CHIP	0.1MF	25V	
C45	1-163-038-11	CERAMIC CHIP	0.1MF	25V	
C46	1-163-099-00	CERAMIC CHIP	18PF	5% 50V	
C47	1-163-231-11	CERAMIC CHIP	15PF	5% 50V	
C51	1-163-133-00	CERAMIC CHIP	470PF	5% 50V	
C104	1-164-489-11	CERAMIC CHIP	0.22MF	10% 16V	
C105	1-163-231-11	CERAMIC CHIP	15PF	5% 50V	
C106	1-163-227-11	CERAMIC CHIP	10PF	0.5PF 50V	
C107	1-163-099-00	CERAMIC CHIP	18PF	5% 50V	
C108	1-163-227-11	CERAMIC CHIP	10PF	0.5PF 50V	
C109	1-163-038-11	CERAMIC CHIP	0.1MF	25V	
C110	1-163-031-11	CERAMIC CHIP	0.01MF	50V	
C111	1-164-505-11	CERAMIC CHIP	2.2MF	16V	
C112	1-164-505-11	CERAMIC CHIP	2.2MF	16V	
C113	1-163-031-11	CERAMIC CHIP	0.01MF	50V	
C114	1-163-031-11	CERAMIC CHIP	0.01MF	50V	
C115	1-163-235-11	CERAMIC CHIP	22PF	5% 50V	
C116	1-163-235-11	CERAMIC CHIP	22PF	5% 50V	
C117	1-163-031-11	CERAMIC CHIP	0.01MF	50V	
C118	1-163-017-00	CERAMIC CHIP	0.0047MF	10% 50V	
C151	1-126-396-11	ELECT CHIP	47MF	20% 16V	
C154	1-164-004-11	CERAMIC CHIP	0.1MF	10% 25V	
C155	1-164-182-11	CERAMIC CHIP	0.0033MF	10% 50V	
C156	1-164-344-11	CERAMIC CHIP	0.068MF	10% 25V	
C157	1-164-004-11	CERAMIC CHIP	0.1MF	10% 25V	
C201	1-126-392-11	ELECT CHIP	100MF	20% 6.3V	
C202	1-126-392-11	ELECT CHIP	100MF	20% 6.3V	
C203	1-126-392-11	ELECT CHIP	100MF	20% 6.3V	
C204	1-126-392-11	ELECT CHIP	100MF	20% 6.3V	
C205	1-126-392-11	ELECT CHIP	100MF	20% 6.3V	
C206	1-126-392-11	ELECT CHIP	100MF	20% 6.3V	
C207	1-126-392-11	ELECT CHIP	100MF	20% 6.3V	
C208	1-126-392-11	ELECT CHIP	100MF	20% 6.3V	
C209	1-126-392-11	ELECT CHIP	100MF	20% 6.3V	
C210	1-126-392-11	ELECT CHIP	100MF	20% 6.3V	
C211	1-126-392-11	ELECT CHIP	100MF	20% 6.3V	
C212	1-126-392-11	ELECT CHIP	100MF	20% 6.3V	
C213	1-126-392-11	ELECT CHIP	100MF	20% 6.3V	
C214	1-126-392-11	ELECT CHIP	100MF	20% 6.3V	
C215	1-126-392-11	ELECT CHIP	100MF	20% 6.3V	
C216	1-126-392-11	ELECT CHIP	100MF	20% 6.3V	
C217	1-126-392-11	ELECT CHIP	100MF	20% 6.3V	
C218	1-126-392-11	ELECT CHIP	100MF	20% 6.3V	
C219	1-126-392-11	ELECT CHIP	100MF	20% 6.3V	
C220	1-126-392-11	ELECT CHIP	100MF	20% 6.3V	
C231	1-126-392-11	ELECT CHIP	100MF	20% 6.3V	

BC

REF NO.	PART NO.	DESCRIPTION			REMARK
C232	1-126-392-11	ELECT CHIP	100MF	20%	6.3V
C233	1-126-392-11	ELECT CHIP	100MF	20%	6.3V
C234	1-126-392-11	ELECT CHIP	100MF	20%	6.3V
C235	1-126-392-11	ELECT CHIP	100MF	20%	6.3V
C236	1-126-392-11	ELECT CHIP	100MF	20%	6.3V
C237	1-126-392-11	ELECT CHIP	100MF	20%	6.3V
C241	1-126-392-11	ELECT CHIP	100MF	20%	6.3V
C242	1-126-392-11	ELECT CHIP	100MF	20%	6.3V
C243	1-126-168-11	ELECT CHIP	1000MF	20%	6.3V
C244	1-126-392-11	ELECT CHIP	100MF	20%	6.3V
C245	1-126-392-11	ELECT CHIP	100MF	20%	6.3V
C246	1-126-392-11	ELECT CHIP	100MF	20%	6.3V
C247	1-126-397-11	ELECT CHIP	33MF	20%	25V
C248	1-126-392-11	ELECT CHIP	100MF	20%	6.3V
C251	1-126-397-11	ELECT CHIP	33MF	20%	25V
C252	1-126-396-11	ELECT CHIP	47MF	20%	16V
C271	1-126-396-11	ELECT CHIP	47MF	20%	16V
C281	1-126-392-11	ELECT CHIP	100MF	20%	6.3V
C291	1-126-396-11	ELECT CHIP	47MF	20%	16V
C301	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C302	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C303	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C304	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C305	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C306	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C307	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C308	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C309	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C310	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C311	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C312	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C313	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C314	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C315	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C316	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C317	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C318	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C319	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C320	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C321	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C322	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C323	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C324	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C325	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C326	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C327	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C328	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C329	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C330	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C331	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C332	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C333	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C334	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C335	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C336	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C337	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C338	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C339	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C340	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C341	1-135-216-11	TANTAL. CHIP	10MF	20%	10V
C342	1-135-216-11	TANTAL. CHIP	10MF	20%	10V
C343	1-135-216-11	TANTAL. CHIP	10MF	20%	10V
C344	1-135-216-11	TANTAL. CHIP	10MF	20%	10V
C351	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C352	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C357	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C358	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C359	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C360	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C362	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C363	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C364	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C365	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C366	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C367	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C368	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C369	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C370	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C371	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C372	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C373	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C374	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C375	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C376	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C377	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C378	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C379	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C380	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C381	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C382	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C391	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C392	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C393	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C394	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C401	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C402	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C403	1-126-394-11	ELECT CHIP	10MF	20%	16V
C404	1-126-390-11	ELECT CHIP	22MF	20%	6.3V
C405	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C406	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C407	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C551	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C552	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C553	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C554	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C555	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C556	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C557	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C558	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C916	1-126-397-11	ELECT CHIP	33MF	20%	25V
C918	1-163-031-11	CERAMIC CHIP	0.01MF		50V
		<CONNECTOR>			
CN1	1-774-523-11	PIN, CONNECTOR (PC BOARD) 64P			
CN2	1-774-523-11	PIN, CONNECTOR (PC BOARD) 64P			
CN3	1-565-269-11	SOCKET, CONNECTOR (D-DUB,L) 9P			
CN4	1-565-269-11	SOCKET, CONNECTOR (D-DUB,L) 9P			

REF NO.	PART NO.	DESCRIPTION	REMARK
CN5	1-565-269-11	SOCKET, CONNECTOR (D-DUB,L) 9P	
CN6	1-565-269-11	SOCKET, CONNECTOR (D-DUB,L) 9P	
CN7	* 1-784-403-11	CONNECTOR, BOARD TO BOARD 40P	
		<DIODE>	
D1	8-719-158-19	DIODE RD6.2SB	
D2	8-719-158-19	DIODE RD6.2SB	
D3	8-719-158-19	DIODE RD6.2SB	
D4	8-719-158-19	DIODE RD6.2SB	
D5	8-719-158-19	DIODE RD6.2SB	
D6	8-719-037-22	DIODE RD12SB-T1	
D7	8-719-037-22	DIODE RD12SB-T1	
D8	8-719-037-22	DIODE RD12SB-T1	
D9	8-719-037-22	DIODE RD12SB-T1	
D10	8-719-037-22	DIODE RD12SB-T1	
D11	8-719-037-22	DIODE RD12SB-T1	
D12	8-719-158-19	DIODE RD6.2SB	
D13	8-719-404-49	DIODE MA111	
D21	8-719-158-19	DIODE RD6.2SB	
D22	8-719-158-19	DIODE RD6.2SB	
D23	8-719-158-19	DIODE RD6.2SB	
D24	8-719-158-19	DIODE RD6.2SB	
D29	8-719-158-19	DIODE RD6.2SB	
D30	8-719-158-19	DIODE RD6.2SB	
D31	8-719-158-19	DIODE RD6.2SB	
D32	8-719-158-19	DIODE RD6.2SB	
D33	8-719-158-19	DIODE RD6.2SB	
D34	8-719-158-19	DIODE RD6.2SB	
D35	8-719-158-19	DIODE RD6.2SB	
D36	8-719-158-19	DIODE RD6.2SB	
D37	8-719-158-19	DIODE RD6.2SB	
D38	8-719-158-19	DIODE RD6.2SB	
D39	8-719-158-19	DIODE RD6.2SB	
D40	8-719-158-19	DIODE RD6.2SB	
D41	8-719-158-19	DIODE RD6.2SB	
D103	8-719-404-49	DIODE MA111	
D104	8-719-404-49	DIODE MA111	
D105	8-719-404-49	DIODE MA111	
D106	8-719-404-49	DIODE MA111	
D107	8-719-404-49	DIODE MA111	
D108	8-719-404-49	DIODE MA111	
D109	8-719-404-49	DIODE MA111	
D111	8-719-404-49	DIODE MA111	
D112	8-719-404-49	DIODE MA111	
D113	8-719-404-49	DIODE MA111	
D114	8-719-158-19	DIODE RD6.2SB	
D115	8-719-158-19	DIODE RD6.2SB	
D401	8-719-404-49	DIODE MA111	
D402	8-719-404-49	DIODE MA111	
D403	8-719-158-19	DIODE RD6.2SB	
D550	8-719-037-22	DIODE RD12SB-T1	
D551	8-719-037-22	DIODE RD12SB-T1	
D552	8-719-037-22	DIODE RD12SB-T1	
D553	8-719-037-22	DIODE RD12SB-T1	
D554	8-719-037-22	DIODE RD12SB-T1	
D555	8-719-037-22	DIODE RD12SB-T1	
D556	8-719-037-22	DIODE RD12SB-T1	
D557	8-719-037-22	DIODE RD12SB-T1	
D558	8-719-037-22	DIODE RD12SB-T1	
D559	8-719-037-22	DIODE RD12SB-T1	
D560	8-719-037-22	DIODE RD12SB-T1	
D561	8-719-037-22	DIODE RD12SB-T1	
		<FILTER>	
FL1	1-239-183-11	FILTER, EMI	
FL2	1-239-183-11	FILTER, EMI	
FL3	1-239-183-11	FILTER, EMI	
FL5	1-239-183-11	FILTER, EMI	
FL6	1-236-071-11	ENCAPSULATED COMPONENT	
FL7	1-239-183-11	FILTER, EMI	
FL8	1-239-183-11	FILTER, EMI	
FL9	1-239-183-11	FILTER, EMI	
FL10	1-239-183-11	FILTER, EMI	
FL200	1-236-071-11	ENCAPSULATED COMPONENT	
FL201	1-236-071-11	ENCAPSULATED COMPONENT	
FL202	1-239-183-11	FILTER, EMI	
FL203	1-239-183-11	FILTER, EMI	
FL204	1-239-183-11	FILTER, EMI	
FL205	1-239-183-11	FILTER, EMI	
FL210	1-239-183-11	FILTER, EMI	
FL211	1-239-183-11	FILTER, EMI	
FL212	1-239-183-11	FILTER, EMI	
FL213	1-239-183-11	FILTER, EMI	
FL214	1-239-183-11	FILTER, EMI	
FL220	1-239-183-11	FILTER, EMI	
FL221	1-239-183-11	FILTER, EMI	
FL222	1-239-183-11	FILTER, EMI	
FL223	1-239-183-11	FILTER, EMI	
FL551	1-239-183-11	FILTER, EMI	
FL552	1-239-183-11	FILTER, EMI	
FL553	1-239-183-11	FILTER, EMI	
FL554	1-239-183-11	FILTER, EMI	
FL555	1-239-183-11	FILTER, EMI	
FL556	1-239-183-11	FILTER, EMI	
FL557	1-239-183-11	FILTER, EMI	
FL558	1-239-183-11	FILTER, EMI	
FL562	1-239-183-11	FILTER, EMI	
FL563	1-239-183-11	FILTER, EMI	
FL564	1-239-183-11	FILTER, EMI	
FL566	1-239-183-11	FILTER, EMI	
FL567	1-239-183-11	FILTER, EMI	
FL568	1-239-183-11	FILTER, EMI	
		<IC>	
IC1	8-759-530-79	IC HD6435368AG14M	
IC2	8-759-346-07	IC MM1026BFB	
IC3	8-759-395-43	IC CAT28F020P-15	
IC4	8-752-383-61	IC CXK58257CM-70LL-T6	
IC5	8-752-381-84	IC CXD1095BQ	
IC6	8-752-381-84	IC CXD1095BQ	
IC7	8-759-327-69	IC µPD6453GT-101-E1	
IC8	8-759-925-75	IC SN74HC05ANS	
IC9	8-759-082-59	IC TC7W32FU	
IC10	8-759-186-47	IC TC74VHC138F	
IC11	8-759-981-48	IC TL082M	
IC12	8-759-186-44	IC TC74VHC125F	

BC

REF NO.	PART NO.	DESCRIPTION	REMARK
IC13	8-759-186-47	IC TC74VHC138F	
IC14	8-759-289-43	IC LTC490CS8	
IC15	8-759-081-46	IC TC74VHCU04F	
IC16	8-759-186-43	IC TC74VHC123AF	
IC17	8-759-925-73	IC SN74HC03NS	
IC19	8-759-236-19	IC TC74HC151AF(EL)	
IC20	8-759-236-19	IC TC74HC151AF(EL)	
IC21	8-759-236-19	IC TC74HC151AF(EL)	
IC22	8-759-346-05	IC µPD71051GU-10-E2	
IC23	8-759-346-05	IC µPD71051GU-10-E2	
IC24	8-759-346-05	IC µPD71051GU-10-E2	
IC25	8-759-289-45	IC LTC485CS8	
IC26	8-759-289-45	IC LTC485CS8	
IC27	8-759-252-59	IC MAX202CSE	
IC28	8-759-252-59	IC MAX202CSE	
IC29	8-759-186-77	IC TC74VHC541F	
IC30	8-759-186-24	IC TC74VHC4040F(EL)	
IC31	8-759-081-46	IC TC74VHCU04F	
IC32	8-759-925-75	IC SN74HC05ANS	
IC33	8-759-925-75	IC SN74HC05ANS	
IC34	8-759-007-56	IC MC74HC30F	
IC35	8-759-186-77	IC TC74VHC541F	
IC36	8-759-252-59	IC MAX202CSE	
IC37	8-759-182-91	IC PQ12TZ5U	
IC51	8-759-700-65	IC NJM79L05A	
IC52	8-759-144-82	IC µPC2405HF	
IC61	8-759-186-43	IC TC74VHC123AF	
IC62	8-759-195-02	IC TC7S86F-TE85L	
IC63	8-759-011-65	IC MC74HC4053F	
IC104	8-759-186-24	IC TC74VHC4040F(EL)	
IC105	8-752-357-15	IC CXD2343S	
IC106	8-759-186-53	IC TC74VHC163F	
IC109	8-752-334-64	IC CXD1171M	
IC110	8-759-236-55	IC TC74HC166AF(EL)	
IC111	8-759-011-65	IC MC74HC4053F	
IC113	8-759-186-39	IC TC74VHC74F	
IC114	8-759-295-09	IC TLC2932IPW	
IC115	8-759-185-64	IC TC74VHC10F(EL)	
IC116	8-759-011-65	IC MC74HC4053F	
IC117	8-759-081-42	IC TC74VHC00F	
IC119	8-759-011-65	IC MC74HC4053F	
IC120	8-752-321-16	IC CXD1030M	
IC121	8-759-081-46	IC TC74VHCU04F	
IC122	8-759-081-44	IC TC74VHC04F	
IC123	8-759-186-39	IC TC74VHC74F	
IC124	8-759-328-12	IC Z8622812PSC	
IC125	8-759-925-75	IC SN74HC05ANS	
IC401	8-759-988-13	IC LM393PS	
		<CHIP CONDUCTOR>	
JR14	1-216-296-91	SHORT	0
JR15	1-216-295-91	SHORT	0
JR114	1-216-296-91	SHORT	0
JR115	1-216-296-91	SHORT	0
JR116	1-216-296-91	SHORT	0
JR117	1-216-296-91	SHORT	0
JR118	1-216-296-91	SHORT	0
JR119	1-216-296-91	SHORT	0

REF NO.	PART NO.	DESCRIPTION			REMARK
		<COIL>			
L1	1-410-202-51	INDUCTOR CHIP	6.8µH		
L201	1-412-537-31	INDUCTOR	100µH		
		<FILTER>			
LPF101	1-239-289-11	FILTER, LOW PASS			
		<TRANSISTOR>			
Q1	1-801-806-11	TRANSISTOR DTC144EK-T146			
Q2	8-729-901-06	TRANSISTOR DTA144EK			
Q3	8-729-901-06	TRANSISTOR DTA144EK			
Q4	1-801-806-11	TRANSISTOR DTC144EK-T146			
Q5	1-801-806-11	TRANSISTOR DTC144EK-T146			
Q6	8-729-122-13	TRANSISTOR 2SA1221-K			
Q7	8-729-122-13	TRANSISTOR 2SA1221-K			
Q8	1-801-806-11	TRANSISTOR DTC144EK-T146			
Q9	8-729-921-12	TRANSISTOR 2SD1834			
Q10	1-801-806-11	TRANSISTOR DTC144EK-T146			
Q51	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q52	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q103	8-729-901-06	TRANSISTOR DTA144EK			
Q104	8-729-901-06	TRANSISTOR DTA144EK			
Q106	8-729-216-22	TRANSISTOR 2SA1162-G			
Q107	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q108	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q109	8-729-216-22	TRANSISTOR 2SA1162-G			
Q110	8-729-901-06	TRANSISTOR DTA144EK			
Q111	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q112	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q113	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q114	8-729-901-06	TRANSISTOR DTA144EK			
Q115	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q116	1-801-806-11	TRANSISTOR DTC144EK-T146			
Q151	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q152	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q401	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q402	8-729-120-28	TRANSISTOR 2SC1623-L5L6			
Q403	8-729-921-12	TRANSISTOR 2SD1834			
		<RESISTOR>			
R1	1-216-073-00	RES,CHIP	10K	5%	1/10W
R2	1-216-073-00	RES,CHIP	10K	5%	1/10W
R3	1-216-073-00	RES,CHIP	10K	5%	1/10W
R4	1-216-073-00	RES,CHIP	10K	5%	1/10W
R5	1-216-073-00	RES,CHIP	10K	5%	1/10W
R6	1-216-073-00	RES,CHIP	10K	5%	1/10W
R7	1-216-097-91	RES,CHIP	100K	5%	1/10W
R8	1-216-097-91	RES,CHIP	100K	5%	1/10W
R9	1-216-097-91	RES,CHIP	100K	5%	1/10W
R10	1-216-121-91	RES,CHIP	1M	5%	1/10W
R11	1-216-073-00	RES,CHIP	10K	5%	1/10W
R12	1-216-049-91	RES,CHIP	1K	5%	1/10W
R13	1-216-049-91	RES,CHIP	1K	5%	1/10W
R14	1-216-049-91	RES,CHIP	1K	5%	1/10W
R15	1-216-049-91	RES,CHIP	1K	5%	1/10W
R16	1-216-073-00	RES,CHIP	10K	5%	1/10W
R17	1-216-073-00	RES,CHIP	10K	5%	1/10W
R18	1-216-057-00	RES,CHIP	2.2K	5%	1/10W

REF NO.	PART NO.	DESCRIPTION			REMARK
R19	1-216-069-00	RES,CHIP	6.8K	5%	1/10W
R20	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R21	1-216-077-00	RES,CHIP	15K	5%	1/10W
R22	1-216-073-00	RES,CHIP	10K	5%	1/10W
R23	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R24	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R25	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R26	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R27	1-216-049-91	RES,CHIP	1K	5%	1/10W
R28	1-216-049-91	RES,CHIP	1K	5%	1/10W
R29	1-216-073-00	RES,CHIP	10K	5%	1/10W
R31	1-216-121-91	RES,CHIP	1M	5%	1/10W
R32	1-216-097-91	RES,CHIP	100K	5%	1/10W
R33	1-216-097-91	RES,CHIP	100K	5%	1/10W
R34	1-216-097-91	RES,CHIP	100K	5%	1/10W
R35	1-216-097-91	RES,CHIP	100K	5%	1/10W
R36	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R37	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R38	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R41	1-216-097-91	RES,CHIP	100K	5%	1/10W
R42	1-216-097-91	RES,CHIP	100K	5%	1/10W
R43	1-216-097-91	RES,CHIP	100K	5%	1/10W
R44	1-216-097-91	RES,CHIP	100K	5%	1/10W
R45	1-216-097-91	RES,CHIP	100K	5%	1/10W
R46	1-216-097-91	RES,CHIP	100K	5%	1/10W
R47	1-216-097-91	RES,CHIP	100K	5%	1/10W
R48	1-216-097-91	RES,CHIP	100K	5%	1/10W
R51	1-216-049-91	RES,CHIP	1K	5%	1/10W
R52	1-216-049-91	RES,CHIP	1K	5%	1/10W
R53	1-216-049-91	RES,CHIP	1K	5%	1/10W
R54	1-216-049-91	RES,CHIP	1K	5%	1/10W
R55	1-216-049-91	RES,CHIP	1K	5%	1/10W
R56	1-216-073-00	RES,CHIP	10K	5%	1/10W
R57	1-216-049-91	RES,CHIP	1K	5%	1/10W
R58	1-216-049-91	RES,CHIP	1K	5%	1/10W
R59	1-216-049-91	RES,CHIP	1K	5%	1/10W
R60	1-216-045-00	RES,CHIP	680	5%	1/10W
R61	1-216-047-91	RES,CHIP	820	5%	1/10W
R62	1-216-053-00	RES,CHIP	1.5K	5%	1/10W
R63	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R64	1-216-069-00	RES,CHIP	6.8K	5%	1/10W
R69	1-216-295-91	SHORT	0		
R70	1-216-049-91	RES,CHIP	1K	5%	1/10W
R71	1-216-049-91	RES,CHIP	1K	5%	1/10W
R72	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W
R73	1-216-097-91	RES,CHIP	100K	5%	1/10W
R74	1-216-073-00	RES,CHIP	10K	5%	1/10W
R75	1-216-073-00	RES,CHIP	10K	5%	1/10W
R76	1-216-073-00	RES,CHIP	10K	5%	1/10W
R77	1-216-073-00	RES,CHIP	10K	5%	1/10W
R84	1-216-033-00	RES,CHIP	220	5%	1/10W
R85	1-216-033-00	RES,CHIP	220	5%	1/10W
R86	1-216-033-00	RES,CHIP	220	5%	1/10W
R87	1-216-033-00	RES,CHIP	220	5%	1/10W
R88	1-216-033-00	RES,CHIP	220	5%	1/10W
R89	1-216-033-00	RES,CHIP	220	5%	1/10W
R90	1-216-097-91	RES,CHIP	100K	5%	1/10W
R91	1-216-097-91	RES,CHIP	100K	5%	1/10W

REF NO.	PART NO.	DESCRIPTION			REMARK
R92	1-216-097-91	RES,CHIP	100K	5%	1/10W
R93	1-216-097-91	RES,CHIP	100K	5%	1/10W
R94	1-216-097-91	RES,CHIP	100K	5%	1/10W
R95	1-216-097-91	RES,CHIP	100K	5%	1/10W
R96	1-216-097-91	RES,CHIP	100K	5%	1/10W
R97	1-216-097-91	RES,CHIP	100K	5%	1/10W
R101	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W
R102	1-216-097-91	RES,CHIP	100K	5%	1/10W
R103	1-216-059-00	RES,CHIP	2.7K	5%	1/10W
R104	1-216-691-11	METAL CHIP	47K	0.50%	1/10W
R105	1-216-661-11	METAL CHIP	2.7K	0.50%	1/10W
R106	1-216-059-00	RES,CHIP	2.7K	5%	1/10W
R109	1-216-073-00	RES,CHIP	10K	5%	1/10W
R110	1-216-079-00	RES,CHIP	18K	5%	1/10W
R111	1-216-061-00	RES,CHIP	3.3K	5%	1/10W
R112	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R113	1-216-061-00	RES,CHIP	3.3K	5%	1/10W
R114	1-216-634-11	METAL CHIP	200	0.50%	1/10W
R115	1-216-049-91	RES,CHIP	1K	5%	1/10W
R116	1-216-081-00	RES,CHIP	22K	5%	1/10W
R117	1-216-073-00	RES,CHIP	10K	5%	1/10W
R118	1-216-061-00	RES,CHIP	3.3K	5%	1/10W
R119	1-216-073-00	RES,CHIP	10K	5%	1/10W
R120	1-216-073-00	RES,CHIP	10K	5%	1/10W
R121	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R122	1-216-077-00	RES,CHIP	15K	5%	1/10W
R123	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R124	1-216-061-00	RES,CHIP	3.3K	5%	1/10W
R125	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R126	1-216-049-91	RES,CHIP	1K	5%	1/10W
R127	1-216-049-91	RES,CHIP	1K	5%	1/10W
R128	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R129	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R130	1-216-097-91	RES,CHIP	100K	5%	1/10W
R131	1-216-025-91	RES,CHIP	100	5%	1/10W
R132	1-216-081-00	RES,CHIP	22K	5%	1/10W
R133	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R134	1-216-097-91	RES,CHIP	100K	5%	1/10W
R135	1-216-025-91	RES,CHIP	100	5%	1/10W
R136	1-216-081-00	RES,CHIP	22K	5%	1/10W
R137	1-216-025-91	RES,CHIP	100	5%	1/10W
R138	1-216-081-00	RES,CHIP	22K	5%	1/10W
R139	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R140	1-216-097-91	RES,CHIP	100K	5%	1/10W
R141	1-216-025-91	RES,CHIP	100	5%	1/10W
R151	1-216-081-00	RES,CHIP	22K	5%	1/10W
R152	1-216-081-00	RES,CHIP	22K	5%	1/10W
R153	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R154	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R155	1-216-049-91	RES,CHIP	1K	5%	1/10W
R157	1-216-069-00	RES,CHIP	6.8K	5%	1/10W
R159	1-216-133-00	RES,CHIP	3.3M	5%	1/10W
R189	1-216-073-00	RES,CHIP	10K	5%	1/10W
R191	1-216-121-91	RES,CHIP	1M	5%	1/10W
R192	1-216-121-91	RES,CHIP	1M	5%	1/10W
R193	1-216-121-91	RES,CHIP	1M	5%	1/10W
R201	1-216-073-00	RES,CHIP	10K	5%	1/10W
R202	1-216-041-00	RES,CHIP	470	5%	1/10W
R203	1-216-081-00	RES,CHIP	22K	5%	1/10W

BC **BK**

REF NO.	PART NO.	DESCRIPTION			REMARK
R204	1-216-077-00	RES,CHIP	15K	5%	1/10W
R300	1-216-073-00	RES,CHIP	10K	5%	1/10W
R301	1-216-073-00	RES,CHIP	10K	5%	1/10W
R302	1-216-073-00	RES,CHIP	10K	5%	1/10W
R303	1-216-073-00	RES,CHIP	10K	5%	1/10W
R311	1-216-025-91	RES,CHIP	100	5%	1/10W
R312	1-216-025-91	RES,CHIP	100	5%	1/10W
R313	1-216-025-91	RES,CHIP	100	5%	1/10W
R314	1-216-025-91	RES,CHIP	100	5%	1/10W
R401	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R402	1-216-073-00	RES,CHIP	10K	5%	1/10W
R403	1-217-671-11	RES,CHIP	1	5%	1/10W
R404	1-217-671-11	RES,CHIP	1	5%	1/10W
R405	1-217-671-11	RES,CHIP	1	5%	1/10W
R406	1-216-073-00	RES,CHIP	10K	5%	1/10W
R407	1-216-061-00	RES,CHIP	3.3K	5%	1/10W
R408	1-216-073-00	RES,CHIP	10K	5%	1/10W
R409	1-216-073-00	RES,CHIP	10K	5%	1/10W
R410	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R411	1-216-097-91	RES,CHIP	100K	5%	1/10W
R551	1-216-049-91	RES,CHIP	1K	5%	1/10W
R552	1-216-049-91	RES,CHIP	1K	5%	1/10W
R553	1-216-049-91	RES,CHIP	1K	5%	1/10W
R554	1-216-049-91	RES,CHIP	1K	5%	1/10W
R555	1-216-049-91	RES,CHIP	1K	5%	1/10W
R556	1-216-049-91	RES,CHIP	1K	5%	1/10W
R557	1-216-049-91	RES,CHIP	1K	5%	1/10W
R558	1-216-049-91	RES,CHIP	1K	5%	1/10W
		<VARIABLE RESISTOR>			
RV101	1-238-787-11	RES, ADJ, CERMET 10K			
		<RELAY>			
RY401	1-515-716-11	RELAY (TQ2-5V)			
		<TEST PIN>			
TP1	1-537-864-11	PIN, POST			
TP3	1-537-864-11	PIN, POST			
TP5	1-537-864-11	PIN, POST			
TP6	1-537-864-11	PIN, POST			
TP7	1-537-864-11	PIN, POST			
TP8	1-537-864-11	PIN, POST			
TP9	1-537-864-11	PIN, POST			
TP10	1-537-864-11	PIN, POST			
TP11	1-537-864-11	PIN, POST			
TP12	1-537-864-11	PIN, POST			
TP13	1-537-864-11	PIN, POST			
		<CRYSTAL>			
X1	1-767-892-21	VIBRATOR, CRYSTAL (20MHz)			
X2	1-760-464-11	VIBRATOR, CRYSTAL (4.9152MHz)			
X101	1-767-655-21	VIBRATOR, CRYSTAL (14.31818MHz)			
X102	1-767-891-21	VIBRATOR, CRYSTAL (14.1875MHz)			
X103	1-760-429-11	VIBRATOR, CRYSTAL (14.5MHz)			

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REF NO.	PART NO.	DESCRIPTION			REMARK
	* A-1135-921-A	BK COMPL (20G1)			
		**********			
	* A-1135-941-A	BK COMPLE (14G1/14G5)			
		**********			
	* X-4033-105-1	PANEL (BK) ASSY, CONNECTOR			
	* 3-648-057-00	NUT (ISO-4), U			
	* 4-050-814-01	SHIELD, PWB			
	* 4-053-411-01	SHIELD (BK), PWB (14G1/14G5)			
	* 4-057-770-01	INSULATOR			
	4-382-854-01	SCREW (M3X8), P, SW (+)(14G1/14G5)			
	4-623-699-01	SCREW (3X5)			
	* 4-625-464-01	SUPPORT, FITTING, MB			
	7-682-566-04	SCREW +B 4X20			
	7-682-647-09	SCREW +PS 3X6			
	7-685-872-09	SCREW +BVTT 3X8 (S)			
		<CAPACITOR>			
C1	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C3	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C5	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C7	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C8	1-126-396-11	ELECT CHIP	47MF	20%	16V
C9	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C11	1-126-396-11	ELECT CHIP	47MF	20%	16V
C12	1-126-396-11	ELECT CHIP	47MF	20%	16V
C13	1-126-396-11	ELECT CHIP	47MF	20%	16V
C14	1-126-397-11	ELECT CHIP	33MF	20%	25V
C15	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C100	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C101	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C102	1-115-155-11	ELECT CHIP	22MF	20%	16V
C103	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C104	1-163-037-11	CERAMIC CHIP	0.022MF	10%	50V
C122	1-126-396-11	ELECT CHIP	47MF	20%	16V
C128	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C129	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C130	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C131	1-163-087-00	CERAMIC CHIP	4PF	0.25PF	50V
C140	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C141	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C142	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C143	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C144	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C145	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C146	1-126-392-11	ELECT CHIP	100MF	20%	6.3V
C147	1-126-392-11	ELECT CHIP	100MF	20%	6.3V
C154	1-126-390-11	ELECT CHIP	22MF	20%	6.3V
C160	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C161	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C162	1-163-249-11	CERAMIC CHIP	82PF	5%	50V
C163	1-163-091-00	CERAMIC CHIP	8PF	0.25PF	50V
C164	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C165	1-164-222-11	CERAMIC CHIP	0.22MF		25V
C166	1-164-700-11	CERAMIC CHIP	0.68MF		16V
C167	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C168	1-163-075-00	CERAMIC CHIP	0.047MF	10%	25V
C169	1-163-075-00	CERAMIC CHIP	0.047MF	10%	25V

REF NO.	PART NO.	DESCRIPTION			REMARK
C170	1-164-336-11	CERAMIC CHIP	0.33MF		25V
C171	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C172	1-104-823-11	TANTAL. CHIP	47MF	20%	16V
C173	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C174	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C175	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C176	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C177	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C178	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C179	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C180	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C181	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C182	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C183	1-163-033-91	CERAMIC CHIP	0.022MF		50V
C187	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C188	1-163-038-11	CERAMIC CHIP	0.1MF		25V
C189	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C190	1-164-222-11	CERAMIC CHIP	0.22MF		25V
C191	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C192	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C193	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C194	1-107-364-11	MYLAR	0.01MF	10%	200V
C195	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C196	1-107-943-11	ELECT	10MF	20%	160V
C197	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C198	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C199	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C200	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C201	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C202	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C203	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C204	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C220	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C222	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C230	1-126-392-11	ELECT CHIP	100MF	20%	6.3V
C231	1-126-391-11	ELECT CHIP	47MF	20%	6.3V
C232	1-126-391-11	ELECT CHIP	47MF	20%	6.3V
C240	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C241	1-163-085-00	CERAMIC CHIP	2PF	0.25PF	50V
C300	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C301	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C302	1-115-155-11	ELECT CHIP	22MF	20%	16V
C303	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C304	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C305	1-163-037-11	CERAMIC CHIP	0.022MF	10%	50V
C307	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C308	1-164-700-11	CERAMIC CHIP	0.68MF		16V
C309	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C310	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C311	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C322	1-126-392-11	ELECT CHIP	100MF	20%	6.3V
C323	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C324	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C326	1-164-222-11	CERAMIC CHIP	0.22MF		25V
C327	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C328	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C329	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C330	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C331	1-163-087-00	CERAMIC CHIP	4PF	0.25PF	50V
C350	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C351	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C352	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C353	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C354	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C355	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C356	1-126-392-11	ELECT CHIP	100MF	20%	6.3V
C357	1-126-392-11	ELECT CHIP	100MF	20%	6.3V
C360	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C361	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C362	1-163-249-11	CERAMIC CHIP	82PF	5%	50V
C363	1-163-091-00	CERAMIC CHIP	8PF	0.25PF	50V
C374	1-164-222-11	CERAMIC CHIP	0.22MF		25V
C375	1-164-700-11	CERAMIC CHIP	0.68MF		16V
C376	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C377	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C378	1-163-075-00	CERAMIC CHIP	0.047MF	10%	25V
C379	1-163-075-00	CERAMIC CHIP	0.047MF	10%	25V
C380	1-164-336-11	CERAMIC CHIP	0.33MF		25V
C381	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C382	1-104-823-11	TANTAL. CHIP	47MF	20%	16V
C383	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C384	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C385	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C386	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C387	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C388	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C389	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C390	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C391	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C392	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C393	1-163-033-91	CERAMIC CHIP	0.022MF		50V
C397	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C398	1-163-038-11	CERAMIC CHIP	0.1MF		25V
C399	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C400	1-164-222-11	CERAMIC CHIP	0.22MF		25V
C401	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C402	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C403	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C404	1-107-364-11	MYLAR	0.01MF	10%	200V
C405	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C406	1-107-943-11	ELECT	10MF	20%	160V
C407	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C409	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C410	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C411	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C412	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C420	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C421	1-126-390-11	ELECT CHIP	22MF	20%	6.3V
C422	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C430	1-126-392-11	ELECT CHIP	100MF	20%	6.3V
C431	1-126-391-11	ELECT CHIP	47MF	20%	6.3V
C432	1-126-391-11	ELECT CHIP	47MF	20%	6.3V
C440	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C451	1-163-085-00	CERAMIC CHIP	2PF	0.25PF	50V
C500	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C501	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C502	1-115-155-11	ELECT CHIP	22MF	20%	16V

BK

REF NO.	PART NO.	DESCRIPTION			REMARK
C503	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C504	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C505	1-163-037-11	CERAMIC CHIP	0.022MF	10%	50V
C507	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C508	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C509	1-164-700-11	CERAMIC CHIP	0.68MF		16V
C510	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C520	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C523	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C524	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C526	1-164-222-11	CERAMIC CHIP	0.22MF		25V
C527	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C528	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C529	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C530	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C531	1-163-087-00	CERAMIC CHIP	4PF	0.25PF	50V
C540	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C541	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C542	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C543	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C544	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C545	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C546	1-126-392-11	ELECT CHIP	100MF	20%	6.3V
C547	1-126-392-11	ELECT CHIP	100MF	20%	6.3V
C548	1-126-392-11	ELECT CHIP	100MF	20%	6.3V
C549	1-126-392-11	ELECT CHIP	100MF	20%	6.3V
C560	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C561	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C562	1-163-249-11	CERAMIC CHIP	82PF	5%	50V
C563	1-163-091-00	CERAMIC CHIP	8PF	0.25PF	50V
C567	1-164-222-11	CERAMIC CHIP	0.22MF		25V
C568	1-164-700-11	CERAMIC CHIP	0.68MF		16V
C569	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C570	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C571	1-163-075-00	CERAMIC CHIP	0.047MF	10%	25V
C572	1-163-075-00	CERAMIC CHIP	0.047MF	10%	25V
C573	1-164-336-11	CERAMIC CHIP	0.33MF		25V
C574	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C575	1-104-823-11	TANTAL. CHIP	47MF	20%	16V
C576	1-164-005-11	CERAMIC CHIP	0.47MF		25V
C577	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C578	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C579	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C580	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C581	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C582	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C583	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C584	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C585	1-163-809-11	CERAMIC CHIP	0.047MF	10%	25V
C586	1-163-033-91	CERAMIC CHIP	0.022MF		50V
C590	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C591	1-163-038-11	CERAMIC CHIP	0.1MF		25V
C592	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C593	1-164-222-11	CERAMIC CHIP	0.22MF		25V
C594	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C595	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C596	1-163-035-00	CERAMIC CHIP	0.047MF		50V
C597	1-107-364-11	MYLAR	0.01MF	10%	200V

REF NO.	PART NO.	DESCRIPTION			REMARK
C598	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C599	1-107-943-11	ELECT	10MF	20%	160V
C600	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C601	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C602	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C603	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C604	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C605	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C620	1-163-127-00	CERAMIC CHIP	270PF	5%	50V
C621	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C622	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C630	1-126-392-11	ELECT CHIP	100MF	20%	6.3V
C631	1-126-391-11	ELECT CHIP	47MF	20%	6.3V
C632	1-126-391-11	ELECT CHIP	47MF	20%	6.3V
C640	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C641	1-163-087-00	CERAMIC CHIP	4PF	0.25PF	50V
C700	1-163-037-11	CERAMIC CHIP	0.022MF	10%	50V
C701	1-163-037-11	CERAMIC CHIP	0.022MF	10%	50V
C702	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C703	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C704	1-126-391-11	ELECT CHIP	47MF	20%	6.3V
C705	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C706	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C707	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C708	1-115-153-11	ELECT CHIP	4.7MF	20%	16V
C712	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C713	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C714	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C728	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C729	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C734	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C751	1-126-396-11	ELECT CHIP	47MF	20%	16V
C782	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C783	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C800	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C801	1-163-229-11	CERAMIC CHIP	12PF	5%	50V
C802	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C803	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C804	1-115-155-11	ELECT CHIP	22MF	20%	16V
C805	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C806	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C807	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C808	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C809	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C810	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C812	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C813	1-126-394-11	ELECT CHIP	10MF	20%	16V
C814	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C815	1-163-257-11	CERAMIC CHIP	180PF	5%	50V
C816	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C817	1-164-346-11	CERAMIC CHIP	1MF		16V
C818	1-126-390-11	ELECT CHIP	22MF	20%	6.3V
C819	1-163-038-11	CERAMIC CHIP	0.1MF		25V
C820	1-163-038-11	CERAMIC CHIP	0.1MF		25V
C821	1-163-038-11	CERAMIC CHIP	0.1MF		25V
C822	1-163-038-11	CERAMIC CHIP	0.1MF		25V
C823	1-128-235-11	ELECT CHIP	0.47MF	20%	50V
C824	1-164-346-11	CERAMIC CHIP	1MF		16V
C825	1-163-121-00	CERAMIC CHIP	150PF	5%	50V

REF NO.	PART NO.	DESCRIPTION			REMARK
C826	1-163-113-00	CERAMIC CHIP	68PF	5%	50V
C827	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C828	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C829	1-163-019-00	CERAMIC CHIP	0.0068MF	10%	50V
C830	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C831	1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C832	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C833	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C834	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C835	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C836	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C837	1-164-222-11	CERAMIC CHIP	0.22MF		25V
C838	1-164-222-11	CERAMIC CHIP	0.22MF		25V
C840	1-163-023-00	CERAMIC CHIP	0.015MF	10%	50V
C841	1-164-346-11	CERAMIC CHIP	1MF		16V
C847	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C850	1-126-392-11	ELECT CHIP	100MF	20%	6.3V
C851	1-126-168-11	ELECT	1000MF	20%	6.3V
C852	1-126-391-11	ELECT CHIP	47MF	20%	6.3V
C853	1-126-168-11	ELECT	1000MF	20%	6.3V
C861	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C863	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C900	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C901	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C902	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C903	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C904	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C905	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C907	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C908	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C909	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C910	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C911	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C914	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C915	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C917	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C918	1-163-037-11	CERAMIC CHIP	0.022MF	10%	50V
C921	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C924	1-126-391-11	ELECT CHIP	47MF	20%	6.3V
C925	1-126-391-11	ELECT CHIP	47MF	20%	6.3V
C926	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C927	1-126-391-11	ELECT CHIP	47MF	20%	6.3V
C928	1-109-982-11	CERAMIC CHIP	1MF	10%	10V
C929	1-126-391-11	ELECT CHIP	47MF	20%	6.3V
C930	1-126-390-11	ELECT CHIP	22MF	20%	6.3V
C931	1-109-982-11	CERAMIC CHIP	1MF	10%	10V
C1000	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1001	1-126-392-11	ELECT CHIP	100MF	20%	6.3V
C1002	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1003	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1004	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C1005	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1006	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1007	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1008	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1009	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1010	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1011	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C1012	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1013	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1014	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C1015	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1016	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1017	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C1019	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1020	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C1021	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1022	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1023	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C1024	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1025	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1026	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1027	1-126-396-11	ELECT CHIP	47MF	20%	16V
C1028	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1029	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1030	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1031	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1032	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1033	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1034	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1035	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1036	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1037	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C1038	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1039	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1200	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1201	1-126-392-11	ELECT CHIP	100MF	20%	6.3V
C1208	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C1209	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C1210	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1211	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1213	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C1215	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1216	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1217	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1218	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C1222	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C1223	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C1224	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1225	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1227	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C1229	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1230	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1231	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1235	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C1236	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C1237	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1238	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1240	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C1242	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1243	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1244	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1245	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1246	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C1247	1-126-396-11	ELECT CHIP	47MF	20%	16V
C1248	1-163-031-11	CERAMIC CHIP	0.01MF		50V

BK

REF NO.	PART NO.	DESCRIPTION	REMARK
		<CONNECTOR>	
CN1	1-774-523-11	PIN, CONNECTOR (PC BOARD) 64P	
CN2	* 1-564-507-11	PLUG, CONNECTOR 4P	
CN3	* 1-564-507-11	PLUG, CONNECTOR 4P	
CN4	* 1-564-507-11	PLUG, CONNECTOR 4P	
CN5	* 1-564-506-11	PLUG, CONNECTOR 3P	
		<DIODE>	
D11	8-719-158-19	DIODE RD6.2SB	
D12	8-719-158-19	DIODE RD6.2SB	
D13	8-719-158-19	DIODE RD6.2SB	
D14	8-719-158-19	DIODE RD6.2SB	
D102	8-719-404-49	DIODE MA111	
D103	8-719-404-49	DIODE MA111	
D164	8-719-404-49	DIODE MA111	
D165	8-719-404-49	DIODE MA111	
D166	8-719-157-72	DIODE RD22M-B	
D167	8-719-901-83	DIODE 1SS83	
D168	8-719-901-83	DIODE 1SS83	
D200	8-719-404-49	DIODE MA111	
D201	8-719-106-16	DIODE RD6.8M-B1	
D302	8-719-404-49	DIODE MA111	
D303	8-719-404-49	DIODE MA111	
D374	8-719-404-49	DIODE MA111	
D375	8-719-404-49	DIODE MA111	
D376	8-719-157-72	DIODE RD22M-B	
D377	8-719-901-83	DIODE 1SS83	
D378	8-719-901-83	DIODE 1SS83	
D400	8-719-404-49	DIODE MA111	
D401	8-719-106-16	DIODE RD6.8M-B1	
D502	8-719-404-49	DIODE MA111	
D503	8-719-404-49	DIODE MA111	
D567	8-719-404-49	DIODE MA111	
D568	8-719-404-49	DIODE MA111	
D569	8-719-157-72	DIODE RD22M-B	
D570	8-719-901-83	DIODE 1SS83	
D571	8-719-901-83	DIODE 1SS83	
D600	8-719-404-49	DIODE MA111	
D601	8-719-106-16	DIODE RD6.8M-B1	
D701	8-719-404-49	DIODE MA111	
D802	8-719-404-49	DIODE MA111	
D803	8-719-404-49	DIODE MA111	
D804	8-719-404-49	DIODE MA111	
D900	8-719-158-19	DIODE RD6.2SB	
D901	8-719-404-49	DIODE MA111	
D902	8-719-404-49	DIODE MA111	
D903	8-719-404-49	DIODE MA111	
D904	8-719-920-76	DIODE 1S2076	
D905	8-719-404-49	DIODE MA111	
		<FILTER>	
FL900	1-239-480-11	FILTER, EMI	
FL901	1-239-480-11	FILTER, EMI	
FL902	1-239-183-11	FILTER, EMI	
		<IC>	
IC1	8-759-144-82	IC µPC2405HF	
IC2	8-759-247-67	IC LM2990T-5.0	
IC3	8-759-701-88	IC NJM7912FA	
IC101	8-759-011-65	IC MC74HC4053F	
IC102	8-759-981-48	IC TL082M	
IC104	8-759-011-65	IC MC74HC4053F	
IC106	8-759-981-48	IC TL082M	
IC107	8-759-082-61	IC TC4W53FU	
IC110	8-759-011-65	IC MC74HC4053F	
IC111	8-759-981-48	IC TL082M	
IC112	8-752-054-80	IC CXA1521M	
IC113	8-759-011-65	IC MC74HC4053F	
IC114	8-759-981-48	IC TL082M	
IC115	8-759-700-95	IC NJM1496M	
IC116	8-759-011-63	IC MC74HC4051F	
IC117	8-759-011-65	IC MC74HC4053F	
IC118	8-759-981-48	IC TL082M	
IC119	8-759-346-42	IC TDA6101Q/N3	
IC121	8-759-981-48	IC TL082M	
IC122	8-759-981-48	IC TL082M	
IC123	8-759-981-48	IC TL082M	
IC124	8-759-011-65	IC MC74HC4053F	
IC126	8-759-011-65	IC MC74HC4053F	
IC127	8-759-981-48	IC TL082M	
IC128	8-759-100-96	IC µPC4558G2	
IC129	8-759-988-13	IC LM393PS	
IC131	8-759-058-64	IC TC7S32FU(TE85R)	
IC300	8-759-981-48	IC TL082M	
IC301	8-759-011-65	IC MC74HC4053F	
IC302	8-759-981-48	IC TL082M	
IC303	8-752-054-80	IC CXA1521M	
IC304	8-759-011-65	IC MC74HC4053F	
IC305	8-752-053-21	IC CXA1211M	
IC306	8-759-981-48	IC TL082M	
IC307	8-759-082-61	IC TC4W53FU	
IC310	8-759-011-65	IC MC74HC4053F	
IC311	8-759-981-48	IC TL082M	
IC312	8-752-054-80	IC CXA1521M	
IC313	8-759-011-65	IC MC74HC4053F	
IC314	8-759-981-48	IC TL082M	
IC315	8-759-700-95	IC NJM1496M	
IC316	8-759-011-63	IC MC74HC4051F	
IC317	8-759-011-65	IC MC74HC4053F	
IC318	8-759-981-48	IC TL082M	
IC319	8-759-346-42	IC TDA6101Q/N3	
IC320	8-759-981-48	IC TL082M	
IC321	8-759-981-48	IC TL082M	
IC322	8-759-981-48	IC TL082M	
IC323	8-759-981-48	IC TL082M	
IC324	8-759-011-65	IC MC74HC4053F	
IC325	8-759-082-61	IC TC4W53FU	
IC326	8-759-011-65	IC MC74HC4053F	
IC327	8-759-981-48	IC TL082M	
IC328	8-759-100-96	IC µPC4558G2	
IC329	8-759-988-13	IC LM393PS	
IC331	8-759-058-64	IC TC7S32FU(TE85R)	
IC500	8-759-011-65	IC MC74HC4053F	
IC501	8-759-011-65	IC MC74HC4053F	
IC502	8-759-981-48	IC TL082M	
IC503	8-752-054-80	IC CXA1521M	

REF NO.	PART NO.	DESCRIPTION	REMARK
IC504	8-759-011-65	IC MC74HC4053F	
IC506	8-759-981-48	IC TL082M	
IC507	8-759-082-61	IC TC4W53FU	
IC508	8-759-082-61	IC TC4W53FU	
IC509	8-759-058-54	IC TC7S00FU(TE85R)	
IC510	8-759-011-65	IC MC74HC4053F	
IC511	8-759-981-48	IC TL082M	
IC512	8-752-054-80	IC CXA1521M	
IC513	8-759-011-65	IC MC74HC4053F	
IC514	8-759-981-48	IC TL082M	
IC515	8-759-700-95	IC NJM1496M	
IC516	8-759-011-63	IC MC74HC4051F	
IC517	8-759-011-65	IC MC74HC4053F	
IC518	8-759-981-48	IC TL082M	
IC519	8-759-346-42	IC TDA6101Q/N3	
IC520	8-759-981-48	IC TL082M	
IC521	8-759-981-48	IC TL082M	
IC522	8-759-981-48	IC TL082M	
IC523	8-759-981-48	IC TL082M	
IC524	8-759-011-65	IC MC74HC4053F	
IC525	8-759-082-61	IC TC4W53FU	
IC526	8-759-011-65	IC MC74HC4053F	
IC527	8-759-981-48	IC TL082M	
IC528	8-759-100-96	IC µPC4558G2	
IC529	8-759-988-13	IC LM393PS	
IC531	8-759-058-64	IC TC7S32FU(TE85R)	
IC700	8-759-981-48	IC TL082M	
IC701	8-759-011-65	IC MC74HC4053F	
IC702	8-759-011-65	IC MC74HC4053F	
IC703	8-759-988-13	IC LM393PS	
IC704	8-759-981-48	IC TL082M	
IC705	8-759-100-96	IC µPC4558G2	
IC706	8-759-011-65	IC MC74HC4053F	
IC707	8-759-083-94	IC TC7W74FU	
IC710	8-759-988-13	IC LM393PS	
IC711	8-759-082-58	IC TC7W08FU	
IC728	8-759-424-13	IC MC74HC00AFEL	
IC730	8-759-424-14	IC MC74HC02AFEL	
IC731	8-759-367-67	IC MC74HC14AFEL	
IC732	8-759-424-31	IC MC74HC175FEL	
IC734	8-759-424-18	IC MC74HC11FEL	
IC735	8-759-424-14	IC MC74HC02AFEL	
IC736	8-759-424-14	IC MC74HC02AFEL	
IC800	8-759-011-65	IC MC74HC4053F	
IC801	8-759-038-15	IC MC74HC4538AF	
IC802	8-759-100-96	IC µPC4558G2	
IC803	8-759-038-15	IC MC74HC4538AF	
IC804	8-759-038-15	IC MC74HC4538AF	
IC805	8-759-058-55	IC TC7S02FU-TE85L	
IC900	8-759-367-70	IC MC74HC125AFEL	
IC901	8-759-100-96	IC µPC4558G2	
IC902	8-759-346-47	IC MB89613R-236	
IC903	8-759-156-54	IC X25040SI	
IC904	8-759-988-13	IC LM393PS	
IC906	8-759-064-36	IC MB88346BPFV	
IC907	8-759-064-36	IC MB88346BPFV	
IC908	8-759-064-36	IC MB88346BPFV	
IC909	8-759-064-36	IC MB88346BPFV	
IC910	8-759-064-36	IC MB88346BPFV	
IC911	8-759-064-36	IC MB88346BPFV	
IC912	8-759-082-59	IC TC7W32FU	
		<CHIP CONDUCTOR>	
JR101	1-216-295-91	SHORT	0
JR301	1-216-295-91	SHORT	0
JR501	1-216-295-91	SHORT	0
JR731	1-216-295-91	SHORT	0
JR901	1-216-295-91	SHORT	0
JR903	1-216-295-91	SHORT	0
		<TRANSISTOR>	
Q100	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q101	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q102	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q103	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q104	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q105	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q106	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q107	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q108	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q140	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q141	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q142	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q143	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q144	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q164	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q165	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q166	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q167	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q168	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q169	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q170	8-729-920-59	TRANSISTOR IMX2-T109	
Q171	8-729-920-59	TRANSISTOR IMX2-T109	
Q172	8-729-920-59	TRANSISTOR IMX2-T109	
Q174	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q175	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q176	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q177	8-729-033-31	TRANSISTOR 2SK520K44K45-T1B	
Q178	8-729-033-31	TRANSISTOR 2SK520K44K45-T1B	
Q190	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q200	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q300	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q301	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q302	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q303	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q304	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q305	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q306	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q307	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q308	8-729-216-22	TRANSISTOR 2SA1162-G	
Q309	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q310	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q350	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q351	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q352	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q353	8-729-112-65	TRANSISTOR 2SA1462-Y33	

REF NO.	PART NO.	DESCRIPTION	REMARK
Q354	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q374	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q375	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q376	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q377	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q378	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q379	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q380	8-729-920-59	TRANSISTOR IMX2-T109	
Q381	8-729-920-59	TRANSISTOR IMX2-T109	
Q382	8-729-920-59	TRANSISTOR IMX2-T109	
Q384	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q385	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q386	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q387	8-729-033-31	TRANSISTOR 2SK520K44K45-T1B	
Q388	8-729-033-31	TRANSISTOR 2SK520K44K45-T1B	
Q390	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q400	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q500	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q501	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q502	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q503	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q504	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q505	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q506	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q507	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q510	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q540	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q541	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q542	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q543	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q544	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q567	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q568	8-729-920-59	TRANSISTOR IMX2-T109	
Q569	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q570	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q571	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q572	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q573	8-729-920-59	TRANSISTOR IMX2-T109	
Q574	8-729-920-59	TRANSISTOR IMX2-T109	
Q575	8-729-920-59	TRANSISTOR IMX2-T109	
Q577	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q578	8-729-112-65	TRANSISTOR 2SA1462-Y33	
Q579	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q580	8-729-033-31	TRANSISTOR 2SK520K44K45-T1B	
Q581	8-729-033-31	TRANSISTOR 2SK520K44K45-T1B	
Q590	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q600	8-729-107-31	TRANSISTOR 2SC3545-T43	
Q700	8-729-216-22	TRANSISTOR 2SA1162-G	
Q701	8-729-216-22	TRANSISTOR 2SA1162-G	
Q702	8-729-216-22	TRANSISTOR 2SA1162-G	
Q705	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q706	8-729-216-22	TRANSISTOR 2SA1162-G	
Q800	8-729-216-22	TRANSISTOR 2SA1162-G	
Q801	8-729-216-22	TRANSISTOR 2SA1162-G	
Q802	8-729-216-22	TRANSISTOR 2SA1162-G	
Q803	8-729-920-59	TRANSISTOR IMX2-T109	
Q804	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q805	8-729-920-59	TRANSISTOR IMX2-T109	
Q806	8-729-216-22	TRANSISTOR 2SA1162-G	
Q807	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q808	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q809	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q810	8-729-925-42	TRANSISTOR IMT2	
Q811	8-729-925-42	TRANSISTOR IMT2	
Q812	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q813	8-729-216-22	TRANSISTOR 2SA1162-G	
Q814	8-729-216-22	TRANSISTOR 2SA1162-G	
Q815	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q816	8-729-216-22	TRANSISTOR 2SA1162-G	
Q817	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q818	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q819	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q820	8-729-216-22	TRANSISTOR 2SA1162-G	
Q821	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q822	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q823	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q824	8-729-216-22	TRANSISTOR 2SA1162-G	
Q825	8-729-216-22	TRANSISTOR 2SA1162-G	
Q826	8-729-202-38	TRANSISTOR 2SC3326N-A	
Q827	8-729-202-38	TRANSISTOR 2SC3326N-A	
Q828	8-729-216-22	TRANSISTOR 2SA1162-G	
Q829	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q900	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q902	8-729-027-38	TRANSISTOR DTA144EKA-T146	
		<RESISTOR>	
R10	1-216-025-91	RES,CHIP 100 5% 1/10W	
R11	1-216-025-91	RES,CHIP 100 5% 1/10W	
R12	1-216-025-91	RES,CHIP 100 5% 1/10W	
R13	1-216-025-91	RES,CHIP 100 5% 1/10W	
R14	1-216-025-91	RES,CHIP 100 5% 1/10W	
R20	1-249-400-11	CARBON 39 5% 1/4W	F
R100	1-216-085-00	RES,CHIP 33K 5% 1/10W	
R101	1-216-107-00	RES,CHIP 270K 5% 1/10W	
R102	1-216-049-91	RES,CHIP 1K 5% 1/10W	
R103	1-216-097-91	RES,CHIP 100K 5% 1/10W	
R104	1-216-027-00	RES,CHIP 120 5% 1/10W	
R105	1-216-051-00	RES,CHIP 1.2K 5% 1/10W	
R106	1-216-025-91	RES,CHIP 100 5% 1/10W	
R107	1-216-049-91	RES,CHIP 1K 5% 1/10W	
R108	1-216-049-91	RES,CHIP 1K 5% 1/10W	
R109	1-216-009-00	RES,CHIP 22 5% 1/10W	
R110	1-216-009-00	RES,CHIP 22 5% 1/10W	
R111	1-216-657-11	METAL CHIP 1.8K 0.50% 1/10W	
R112	1-216-663-11	METAL CHIP 3.3K 0.50% 1/10W	
R113	1-216-025-91	RES,CHIP 100 5% 1/10W	
R114	1-216-651-11	METAL CHIP 1K 0.50% 1/10W	
R115	1-216-033-00	RES,CHIP 220 5% 1/10W	
R116	1-216-057-00	RES,CHIP 2.2K 5% 1/10W	
R117	1-216-057-00	RES,CHIP 2.2K 5% 1/10W	
R118	1-216-009-00	RES,CHIP 22 5% 1/10W	
R119	1-216-067-00	RES,CHIP 5.6K 5% 1/10W	
R121	1-216-057-00	RES,CHIP 2.2K 5% 1/10W	
R122	1-216-049-91	RES,CHIP 1K 5% 1/10W	
R123	1-216-049-91	RES,CHIP 1K 5% 1/10W	
R124	1-216-049-91	RES,CHIP 1K 5% 1/10W	
R125	1-216-115-00	RES,CHIP 560K 5% 1/10W	

REF NO.	PART NO.	DESCRIPTION			REMARK
R126	1-216-109-00	RES,CHIP	330K	5%	1/10W
R140	1-216-638-11	METAL CHIP	300	0.50%	1/10W
R141	1-216-674-11	METAL CHIP	9.1K	0.50%	1/10W
R142	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R143	1-216-047-91	RES,CHIP	820	5%	1/10W
R144	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R146	1-216-053-00	RES,CHIP	1.5K	5%	1/10W
R147	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R148	1-218-764-11	METAL CHIP	330K	0.50%	1/10W
R149	1-216-025-91	RES,CHIP	100	5%	1/10W
R150	1-218-758-11	METAL CHIP	180K	0.50%	1/10W
R151	1-216-675-11	METAL CHIP	10K	0.50%	1/10W
R152	1-216-121-91	RES,CHIP	1M	5%	1/10W
R153	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W
R155	1-216-047-91	RES,CHIP	820	5%	1/10W
R156	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R157	1-216-676-11	METAL CHIP	11K	0.50%	1/10W
R158	1-216-691-11	METAL CHIP	47K	0.50%	1/10W
R159	1-216-051-00	RES,CHIP	1.2K	5%	1/10W
R160	1-216-025-91	RES,CHIP	100	5%	1/10W
R162	1-216-049-91	RES,CHIP	1K	5%	1/10W
R163	1-216-073-00	RES,CHIP	10K	5%	1/10W
R164	1-216-633-11	METAL CHIP	180	0.50%	1/10W
R165	1-216-627-11	METAL CHIP	100	0.50%	1/10W
R166	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R167	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R168	1-216-049-91	RES,CHIP	1K	5%	1/10W
R169	1-216-053-00	RES,CHIP	1.5K	5%	1/10W
R170	1-216-654-11	METAL CHIP	1.3K	0.50%	1/10W
R171	1-216-679-11	METAL CHIP	15K	0.50%	1/10W
R172	1-216-049-91	RES,CHIP	1K	5%	1/10W
R173	1-216-025-91	RES,CHIP	100	5%	1/10W
R174	1-216-033-00	RES,CHIP	220	5%	1/10W
R175	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R176	1-216-073-00	RES,CHIP	10K	5%	1/10W
R177	1-216-658-11	METAL CHIP	2K	0.50%	1/10W
R178	1-216-662-11	METAL CHIP	3K	0.50%	1/10W
R179	1-216-025-91	RES,CHIP	100	5%	1/10W
R180	1-216-657-11	METAL CHIP	1.8K	0.50%	1/10W
R181	1-216-653-11	METAL CHIP	1.2K	0.50%	1/10W
R182	1-216-067-00	RES,CHIP	5.6K	5%	1/10W
R183	1-216-025-91	RES,CHIP	100	5%	1/10W
R184	1-216-051-00	RES,CHIP	1.2K	5%	1/10W
R185	1-216-073-00	RES,CHIP	10K	5%	1/10W
R186	1-216-073-00	RES,CHIP	10K	5%	1/10W
R187	1-216-679-11	METAL CHIP	15K	0.50%	1/10W
R188	1-216-049-91	RES,CHIP	1K	5%	1/10W
R189	1-216-025-91	RES,CHIP	100	5%	1/10W
R190	1-216-073-00	RES,CHIP	10K	5%	1/10W
R191	1-216-675-11	METAL CHIP	10K	0.50%	1/10W
R192	1-216-687-11	METAL CHIP	33K	0.50%	1/10W
R193	1-216-679-11	METAL CHIP	15K	0.50%	1/10W
R194	1-216-025-91	RES,CHIP	100	5%	1/10W
R195	1-216-653-11	METAL CHIP	1.2K	0.50%	1/10W
R196	1-216-025-91	RES,CHIP	100	5%	1/10W
R197	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W
R198	1-216-658-11	METAL CHIP	2K	0.50%	1/10W
R199	1-216-661-11	METAL CHIP	2.7K	0.50%	1/10W
R201	1-216-073-00	RES,CHIP	10K	5%	1/10W

REF NO.	PART NO.	DESCRIPTION			REMARK
R202	1-216-677-11	METAL CHIP	12K	0.50%	1/10W
R203	1-216-666-11	METAL CHIP	4.3K	0.50%	1/10W
R204	1-216-670-11	METAL CHIP	6.2K	0.50%	1/10W
R205	1-216-025-91	RES,CHIP	100	5%	1/10W
R206	1-216-679-11	METAL CHIP	15K	0.50%	1/10W
R207	1-216-649-11	METAL CHIP	820	0.50%	1/10W
R208	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R210	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R211	1-216-025-91	RES,CHIP	100	5%	1/10W
R212	1-216-025-91	RES,CHIP	100	5%	1/10W
R213	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R214	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R215	1-216-658-11	METAL CHIP	2K	0.50%	1/10W
R216	1-216-675-11	METAL CHIP	10K	0.50%	1/10W
R217	1-216-073-00	RES,CHIP	10K	5%	1/10W
R219	1-216-033-00	RES,CHIP	220	5%	1/10W
R221	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W
R222	1-216-025-91	RES,CHIP	100	5%	1/10W
R223	1-216-653-11	METAL CHIP	1.2K	0.50%	1/10W
R224	1-216-675-11	METAL CHIP	10K	0.50%	1/10W
R225	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R226	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W
R227	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R228	1-216-025-91	RES,CHIP	100	5%	1/10W
R229	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R230	1-216-073-00	RES,CHIP	10K	5%	1/10W
R232	1-216-073-00	RES,CHIP	10K	5%	1/10W
R236	1-216-095-00	RES,CHIP	82K	5%	1/10W
R237	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R238	1-216-073-00	RES,CHIP	10K	5%	1/10W
R239	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W
R240	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W
R241	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R242	1-216-073-00	RES,CHIP	10K	5%	1/10W
R243	1-216-672-11	METAL CHIP	7.5K	0.50%	1/10W
R244	1-218-766-11	METAL CHIP	390K	0.50%	1/10W
R245	1-216-033-00	RES,CHIP	220	5%	1/10W
R246	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W
R247	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W
R248	1-214-903-31	METAL	39K	1%	1/2W
R249	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W
R250	1-216-033-00	RES,CHIP	220	5%	1/10W
R251	1-216-695-11	METAL CHIP	68K	0.50%	1/10W
R252	1-216-689-11	RES,CHIP	39K	5%	1/10W
R253	1-216-093-00	RES,CHIP	68K	5%	1/10W
R254	1-216-055-00	RES,CHIP	1.8K	5%	1/10W
R255	1-216-073-00	RES,CHIP	10K	5%	1/10W
R256	1-216-073-00	RES,CHIP	10K	5%	1/10W
R257	1-219-743-11	CARBON	100	5%	1/2W
R258	1-216-699-11	METAL CHIP	100K	0.50%	1/10W
R259	1-216-073-00	RES,CHIP	10K	5%	1/10W
R272	1-216-025-91	RES,CHIP	100	5%	1/10W
R273	1-216-073-00	RES,CHIP	10K	5%	1/10W
R287	1-216-033-00	RES,CHIP	220	5%	1/10W
R288	1-216-033-00	RES,CHIP	220	5%	1/10W
R300	1-216-085-00	RES,CHIP	33K	5%	1/10W
R301	1-216-107-00	RES,CHIP	270K	5%	1/10W
R302	1-216-049-91	RES,CHIP	1K	5%	1/10W
R303	1-216-097-91	RES,CHIP	100K	5%	1/10W

BK

REF NO.	PART NO.	DESCRIPTION			REMARK
R304	1-216-009-00	RES,CHIP	22	5%	1/10W
R305	1-216-051-00	RES,CHIP	1.2K	5%	1/10W
R306	1-216-025-91	RES,CHIP	100	5%	1/10W
R307	1-216-049-91	RES,CHIP	1K	5%	1/10W
R308	1-216-049-91	RES,CHIP	1K	5%	1/10W
R309	1-216-009-00	RES,CHIP	22	5%	1/10W
R310	1-216-009-00	RES,CHIP	22	5%	1/10W
R311	1-216-697-91	METAL CHIP	82K	0.50%	1/10W
R312	1-216-657-11	METAL CHIP	1.8K	0.50%	1/10W
R313	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W
R314	1-216-009-00	RES,CHIP	22	5%	1/10W
R315	1-216-676-11	METAL CHIP	11K	0.50%	1/10W
R316	1-216-697-91	METAL CHIP	82K	0.50%	1/10W
R317	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R318	1-216-033-00	RES,CHIP	220	5%	1/10W
R319	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R320	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R321	1-216-009-00	RES,CHIP	22	5%	1/10W
R322	1-216-067-00	RES,CHIP	5.6K	5%	1/10W
R324	1-216-049-91	RES,CHIP	1K	5%	1/10W
R327	1-216-025-91	RES,CHIP	100	5%	1/10W
R328	1-216-073-00	RES,CHIP	10K	5%	1/10W
R329	1-216-687-11	METAL CHIP	33K	0.50%	1/10W
R330	1-216-687-11	METAL CHIP	33K	0.50%	1/10W
R331	1-216-695-11	METAL CHIP	68K	0.50%	1/10W
R332	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R333	1-216-658-11	METAL CHIP	2K	0.50%	1/10W
R334	1-216-687-11	METAL CHIP	33K	0.50%	1/10W
R335	1-216-695-11	METAL CHIP	68K	0.50%	1/10W
R336	1-216-687-11	METAL CHIP	33K	0.50%	1/10W
R337	1-216-675-11	METAL CHIP	10K	0.50%	1/10W
R338	1-216-650-11	METAL CHIP	910	0.50%	1/10W
R340	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R342	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R343	1-216-025-91	RES,CHIP	100	5%	1/10W
R344	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R345	1-216-049-91	RES,CHIP	1K	5%	1/10W
R346	1-216-675-11	METAL CHIP	10K	0.50%	1/10W
R349	1-216-053-00	RES,CHIP	1.5K	5%	1/10W
R350	1-216-638-11	METAL CHIP	300	0.50%	1/10W
R351	1-216-674-11	METAL CHIP	9.1K	0.50%	1/10W
R352	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R353	1-216-047-91	RES,CHIP	820	5%	1/10W
R354	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R357	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R358	1-218-764-11	METAL CHIP	330K	0.50%	1/10W
R359	1-216-025-91	RES,CHIP	100	5%	1/10W
R360	1-218-758-11	METAL CHIP	180K	0.50%	1/10W
R361	1-216-675-11	METAL CHIP	10K	0.50%	1/10W
R362	1-216-121-91	RES,CHIP	1M	5%	1/10W
R363	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W
R365	1-216-047-91	RES,CHIP	820	5%	1/10W
R366	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R367	1-216-676-11	METAL CHIP	11K	0.50%	1/10W
R368	1-216-691-11	METAL CHIP	47K	0.50%	1/10W
R369	1-216-051-00	RES,CHIP	1.2K	5%	1/10W
R370	1-216-025-91	RES,CHIP	100	5%	1/10W
R372	1-216-049-91	RES,CHIP	1K	5%	1/10W

REF NO.	PART NO.	DESCRIPTION			REMARK
R373	1-216-073-00	RES,CHIP	10K	5%	1/10W
R374	1-216-633-11	METAL CHIP	180	0.50%	1/10W
R375	1-216-627-11	METAL CHIP	100	0.50%	1/10W
R376	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R377	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R378	1-216-049-91	RES,CHIP	1K	5%	1/10W
R379	1-216-053-00	RES,CHIP	1.5K	5%	1/10W
R380	1-216-049-91	RES,CHIP	1K	5%	1/10W
R381	1-216-025-91	RES,CHIP	100	5%	1/10W
R383	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R384	1-216-073-00	RES,CHIP	10K	5%	1/10W
R385	1-216-658-11	METAL CHIP	2K	0.50%	1/10W
R386	1-216-683-11	METAL CHIP	22K	0.50%	1/10W
R387	1-216-687-11	METAL CHIP	33K	0.50%	1/10W
R388	1-216-662-11	METAL CHIP	3K	0.50%	1/10W
R389	1-216-025-91	RES,CHIP	100	5%	1/10W
R390	1-216-657-11	METAL CHIP	1.8K	0.50%	1/10W
R391	1-216-653-11	METAL CHIP	1.2K	0.50%	1/10W
R392	1-216-067-00	RES,CHIP	5.6K	5%	1/10W
R393	1-216-025-91	RES,CHIP	100	5%	1/10W
R394	1-216-051-00	RES,CHIP	1.2K	5%	1/10W
R395	1-216-073-00	RES,CHIP	10K	5%	1/10W
R396	1-216-073-00	RES,CHIP	10K	5%	1/10W
R397	1-216-679-11	METAL CHIP	15K	0.50%	1/10W
R398	1-216-049-91	RES,CHIP	1K	5%	1/10W
R399	1-216-025-91	RES,CHIP	100	5%	1/10W
R400	1-216-073-00	RES,CHIP	10K	5%	1/10W
R401	1-216-675-11	METAL CHIP	10K	0.50%	1/10W
R402	1-216-687-11	METAL CHIP	33K	0.50%	1/10W
R403	1-216-679-11	METAL CHIP	15K	0.50%	1/10W
R404	1-216-025-91	RES,CHIP	100	5%	1/10W
R405	1-216-653-11	METAL CHIP	1.2K	0.50%	1/10W
R406	1-216-025-91	RES,CHIP	100	5%	1/10W
R407	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W
R408	1-216-658-11	METAL CHIP	2K	0.50%	1/10W
R409	1-216-661-11	METAL CHIP	2.7K	0.50%	1/10W
R411	1-216-073-00	RES,CHIP	10K	5%	1/10W
R412	1-216-677-11	METAL CHIP	12K	0.50%	1/10W
R413	1-216-666-11	METAL CHIP	4.3K	0.50%	1/10W
R414	1-216-670-11	METAL CHIP	6.2K	0.50%	1/10W
R415	1-216-025-91	RES,CHIP	100	5%	1/10W
R416	1-216-679-11	METAL CHIP	15K	0.50%	1/10W
R417	1-216-649-11	METAL CHIP	820	0.50%	1/10W
R418	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R420	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R421	1-216-025-91	RES,CHIP	100	5%	1/10W
R422	1-216-025-91	RES,CHIP	100	5%	1/10W
R423	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R424	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R425	1-216-658-11	METAL CHIP	2K	0.50%	1/10W
R426	1-216-675-11	METAL CHIP	10K	0.50%	1/10W
R427	1-216-073-00	RES,CHIP	10K	5%	1/10W
R429	1-216-033-00	RES,CHIP	220	5%	1/10W
R431	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W
R432	1-216-025-91	RES,CHIP	100	5%	1/10W
R433	1-216-653-11	METAL CHIP	1.2K	0.50%	1/10W
R434	1-216-675-11	METAL CHIP	10K	0.50%	1/10W
R435	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W

REF NO.	PART NO.	DESCRIPTION			REMARK
R436	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W
R437	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R438	1-216-025-91	RES,CHIP	100	5%	1/10W
R439	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R440	1-216-073-00	RES,CHIP	10K	5%	1/10W
R442	1-216-073-00	RES,CHIP	10K	5%	1/10W
R446	1-216-095-00	RES,CHIP	82K	5%	1/10W
R447	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R448	1-216-073-00	RES,CHIP	10K	5%	1/10W
R449	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W
R450	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W
R451	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R452	1-216-073-00	RES,CHIP	10K	5%	1/10W
R453	1-216-672-11	METAL CHIP	7.5K	0.50%	1/10W
R454	1-218-766-11	METAL CHIP	390K	0.50%	1/10W
R455	1-216-033-00	RES,CHIP	220	5%	1/10W
R456	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W
R457	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W
R458	1-214-903-31	METAL	39K	1%	1/2W
R459	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W
R460	1-216-033-00	RES,CHIP	220	5%	1/10W
R461	1-216-695-11	METAL CHIP	68K	0.50%	1/10W
R462	1-216-689-11	RES,CHIP	39K	5%	1/10W
R463	1-216-093-00	RES,CHIP	68K	5%	1/10W
R464	1-216-055-00	RES,CHIP	1.8K	5%	1/10W
R465	1-216-073-00	RES,CHIP	10K	5%	1/10W
R466	1-216-073-00	RES,CHIP	10K	5%	1/10W
R467	1-219-743-11	CARBON	100	5%	1/2W
R468	1-216-699-11	METAL CHIP	100K	0.50%	1/10W
R469	1-216-073-00	RES,CHIP	10K	5%	1/10W
R472	1-216-025-91	RES,CHIP	100	5%	1/10W
R473	1-216-073-00	RES,CHIP	10K	5%	1/10W
R474	1-216-033-00	RES,CHIP	220	5%	1/10W
R480	1-218-764-11	METAL CHIP	330K	0.50%	1/10W
R481	1-216-121-91	RES,CHIP	1M	5%	1/10W
R482	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W
R483	1-216-049-91	RES,CHIP	1K	5%	1/10W
R485	1-216-073-00	RES,CHIP	10K	5%	1/10W
R486	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R487	1-216-033-00	RES,CHIP	220	5%	1/10W
R488	1-216-033-00	RES,CHIP	220	5%	1/10W
R500	1-216-085-00	RES,CHIP	33K	5%	1/10W
R501	1-216-107-00	RES,CHIP	270K	5%	1/10W
R502	1-216-049-91	RES,CHIP	1K	5%	1/10W
R503	1-216-097-91	RES,CHIP	100K	5%	1/10W
R504	1-216-009-00	RES,CHIP	22	5%	1/10W
R505	1-216-051-00	RES,CHIP	1.2K	5%	1/10W
R506	1-216-025-91	RES,CHIP	100	5%	1/10W
R507	1-216-049-91	RES,CHIP	1K	5%	1/10W
R508	1-216-049-91	RES,CHIP	1K	5%	1/10W
R509	1-216-009-00	RES,CHIP	22	5%	1/10W
R510	1-216-009-00	RES,CHIP	22	5%	1/10W
R511	1-216-697-91	METAL CHIP	82K	0.50%	1/10W
R512	1-216-657-11	METAL CHIP	1.8K	0.50%	1/10W
R513	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W
R514	1-216-009-00	RES,CHIP	22	5%	1/10W
R515	1-216-674-11	METAL CHIP	9.1K	0.50%	1/10W
R516	1-216-697-91	METAL CHIP	82K	0.50%	1/10W
R517	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R518	1-216-033-00	RES,CHIP	220	5%	1/10W
R519	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R520	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R521	1-216-009-00	RES,CHIP	22	5%	1/10W
R522	1-216-067-00	RES,CHIP	5.6K	5%	1/10W
R524	1-216-049-91	RES,CHIP	1K	5%	1/10W
R527	1-216-679-11	METAL CHIP	15K	0.50%	1/10W
R528	1-216-690-11	METAL CHIP	43K	0.50%	1/10W
R529	1-216-025-91	RES,CHIP	100	5%	1/10W
R530	1-216-073-00	RES,CHIP	10K	5%	1/10W
R531	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R532	1-216-049-91	RES,CHIP	1K	5%	1/10W
R540	1-216-637-11	METAL CHIP	270	0.50%	1/10W
R541	1-216-674-11	METAL CHIP	9.1K	0.50%	1/10W
R542	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R543	1-216-047-91	RES,CHIP	820	5%	1/10W
R544	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R546	1-216-053-00	RES,CHIP	1.5K	5%	1/10W
R547	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R548	1-218-764-11	METAL CHIP	330K	0.50%	1/10W
R549	1-216-025-91	RES,CHIP	100	5%	1/10W
R550	1-218-758-11	METAL CHIP	180K	0.50%	1/10W
R551	1-216-675-11	METAL CHIP	10K	0.50%	1/10W
R552	1-216-121-91	RES,CHIP	1M	5%	1/10W
R553	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W
R555	1-216-047-91	RES,CHIP	820	5%	1/10W
R556	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R557	1-216-676-11	METAL CHIP	11K	0.50%	1/10W
R558	1-216-691-11	METAL CHIP	47K	0.50%	1/10W
R559	1-216-051-00	RES,CHIP	1.2K	5%	1/10W
R560	1-216-025-91	RES,CHIP	100	5%	1/10W
R562	1-216-049-91	RES,CHIP	1K	5%	1/10W
R563	1-216-049-91	RES,CHIP	1K	5%	1/10W
R564	1-216-025-91	RES,CHIP	100	5%	1/10W
R565	1-216-073-00	RES,CHIP	10K	5%	1/10W
R566	1-216-097-91	RES,CHIP	100K	5%	1/10W
R567	1-216-097-91	RES,CHIP	100K	5%	1/10W
R568	1-216-633-11	METAL CHIP	180	0.50%	1/10W
R569	1-216-627-11	METAL CHIP	100	0.50%	1/10W
R570	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R571	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R572	1-216-049-91	RES,CHIP	1K	5%	1/10W
R573	1-216-053-00	RES,CHIP	1.5K	5%	1/10W
R574	1-216-049-91	RES,CHIP	1K	5%	1/10W
R575	1-216-025-91	RES,CHIP	100	5%	1/10W
R576	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R577	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R578	1-216-073-00	RES,CHIP	10K	5%	1/10W
R579	1-216-658-11	METAL CHIP	2K	0.50%	1/10W
R580	1-216-683-11	METAL CHIP	22K	0.50%	1/10W
R581	1-216-687-11	METAL CHIP	33K	0.50%	1/10W
R582	1-216-662-11	METAL CHIP	3K	0.50%	1/10W
R583	1-216-025-91	RES,CHIP	100	5%	1/10W
R584	1-216-657-11	METAL CHIP	1.8K	0.50%	1/10W
R585	1-216-653-11	METAL CHIP	1.2K	0.50%	1/10W
R586	1-216-067-00	RES,CHIP	5.6K	5%	1/10W
R587	1-216-025-91	RES,CHIP	100	5%	1/10W
R588	1-216-051-00	RES,CHIP	1.2K	5%	1/10W

BK

REF NO.	PART NO.	DESCRIPTION			REMARK
R589	1-216-073-00	RES,CHIP	10K	5%	1/10W
R590	1-216-073-00	RES,CHIP	10K	5%	1/10W
R591	1-216-679-11	METAL CHIP	15K	0.50%	1/10W
R592	1-216-049-91	RES,CHIP	1K	5%	1/10W
R593	1-216-025-91	RES,CHIP	100	5%	1/10W
R594	1-216-073-00	RES,CHIP	10K	5%	1/10W
R595	1-216-675-11	METAL CHIP	10K	0.50%	1/10W
R596	1-216-687-11	METAL CHIP	33K	0.50%	1/10W
R597	1-216-679-11	METAL CHIP	15K	0.50%	1/10W
R598	1-216-025-91	RES,CHIP	100	5%	1/10W
R599	1-216-653-11	METAL CHIP	1.2K	0.50%	1/10W
R600	1-216-025-91	RES,CHIP	100	5%	1/10W
R601	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W
R602	1-216-658-11	METAL CHIP	2K	0.50%	1/10W
R603	1-216-661-11	METAL CHIP	2.7K	0.50%	1/10W
R605	1-216-073-00	RES,CHIP	10K	5%	1/10W
R606	1-216-677-11	METAL CHIP	12K	0.50%	1/10W
R607	1-216-666-11	METAL CHIP	4.3K	0.50%	1/10W
R608	1-216-670-11	METAL CHIP	6.2K	0.50%	1/10W
R609	1-216-025-91	RES,CHIP	100	5%	1/10W
R610	1-216-679-11	METAL CHIP	15K	0.50%	1/10W
R611	1-216-649-11	METAL CHIP	820	0.50%	1/10W
R612	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R614	1-216-647-11	METAL CHIP	680	0.50%	1/10W
R615	1-216-025-91	RES,CHIP	100	5%	1/10W
R616	1-216-025-91	RES,CHIP	100	5%	1/10W
R617	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R618	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R619	1-216-658-11	METAL CHIP	2K	0.50%	1/10W
R620	1-216-675-11	METAL CHIP	10K	0.50%	1/10W
R621	1-216-073-00	RES,CHIP	10K	5%	1/10W
R623	1-216-033-00	RES,CHIP	220	5%	1/10W
R625	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W
R626	1-216-025-91	RES,CHIP	100	5%	1/10W
R627	1-216-653-11	METAL CHIP	1.2K	0.50%	1/10W
R628	1-216-675-11	METAL CHIP	10K	0.50%	1/10W
R629	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R630	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W
R631	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R632	1-216-025-91	RES,CHIP	100	5%	1/10W
R633	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R634	1-216-073-00	RES,CHIP	10K	5%	1/10W
R636	1-216-073-00	RES,CHIP	10K	5%	1/10W
R640	1-216-095-00	RES,CHIP	82K	5%	1/10W
R641	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R642	1-216-073-00	RES,CHIP	10K	5%	1/10W
R643	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W
R644	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W
R645	1-216-651-11	METAL CHIP	1K	0.50%	1/10W
R646	1-216-073-00	RES,CHIP	10K	5%	1/10W
R647	1-216-672-11	METAL CHIP	7.5K	0.50%	1/10W
R648	1-218-766-11	METAL CHIP	390K	0.50%	1/10W
R649	1-216-033-00	RES,CHIP	220	5%	1/10W
R650	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W
R651	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W
R652	1-214-903-31	METAL	39K	1%	1/2W
R653	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W
R654	1-216-033-00	RES,CHIP	220	5%	1/10W
R655	1-216-695-11	METAL CHIP	68K	0.50%	1/10W
R656	1-216-689-11	RES,CHIP	39K	5%	1/10W
R657	1-216-093-00	RES,CHIP	68K	5%	1/10W
R658	1-216-055-00	RES,CHIP	1.8K	5%	1/10W
R659	1-216-073-00	RES,CHIP	10K	5%	1/10W
R660	1-216-073-00	RES,CHIP	10K	5%	1/10W
R661	1-219-743-11	CARBON	100	5%	1/2W
R662	1-216-699-11	METAL CHIP	100K	0.50%	1/10W
R663	1-216-073-00	RES,CHIP	10K	5%	1/10W
R672	1-216-025-91	RES,CHIP	100	5%	1/10W
R673	1-216-073-00	RES,CHIP	10K	5%	1/10W
R674	1-216-033-00	RES,CHIP	220	5%	1/10W
R680	1-218-764-11	METAL CHIP	330K	0.50%	1/10W
R681	1-216-121-91	RES,CHIP	1M	5%	1/10W
R682	1-216-665-11	METAL CHIP	3.9K	0.50%	1/10W
R683	1-216-049-91	RES,CHIP	1K	5%	1/10W
R685	1-216-073-00	RES,CHIP	10K	5%	1/10W
R686	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R687	1-216-033-00	RES,CHIP	220	5%	1/10W
R688	1-216-033-00	RES,CHIP	220	5%	1/10W
R700	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R701	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R702	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R703	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R704	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R705	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R706	1-216-073-00	RES,CHIP	10K	5%	1/10W
R707	1-216-073-00	RES,CHIP	10K	5%	1/10W
R708	1-216-073-00	RES,CHIP	10K	5%	1/10W
R709	1-216-677-11	METAL CHIP	12K	0.50%	1/10W
R710	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W
R711	1-216-691-11	METAL CHIP	47K	0.50%	1/10W
R712	1-216-685-11	METAL CHIP	27K	0.50%	1/10W
R713	1-216-049-91	RES,CHIP	1K	5%	1/10W
R714	1-216-049-91	RES,CHIP	1K	5%	1/10W
R715	1-216-067-00	RES,CHIP	5.6K	5%	1/10W
R716	1-216-049-91	RES,CHIP	1K	5%	1/10W
R717	1-216-097-91	RES,CHIP	100K	5%	1/10W
R718	1-216-675-11	METAL CHIP	10K	0.50%	1/10W
R719	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W
R720	1-216-073-00	RES,CHIP	10K	5%	1/10W
R721	1-216-025-91	RES,CHIP	100	5%	1/10W
R722	1-216-025-91	RES,CHIP	100	5%	1/10W
R723	1-216-009-00	RES,CHIP	22	5%	1/10W
R724	1-216-009-00	RES,CHIP	22	5%	1/10W
R725	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R726	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R727	1-216-073-00	RES,CHIP	10K	5%	1/10W
R728	1-216-067-00	RES,CHIP	5.6K	5%	1/10W
R729	1-216-061-00	RES,CHIP	3.3K	5%	1/10W
R730	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R731	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R732	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R733	1-216-295-91	SHORT	0		
R735	1-216-033-00	RES,CHIP	220	5%	1/10W
R736	1-216-033-00	RES,CHIP	220	5%	1/10W
R741	1-216-073-00	RES,CHIP	10K	5%	1/10W
R800	1-216-025-91	RES,CHIP	100	5%	1/10W
R801	1-216-063-91	RES,CHIP	3.9K	5%	1/10W

REF NO.	PART NO.	DESCRIPTION			REMARK
R802	1-216-085-00	RES,CHIP	33K	5%	1/10W
R803	1-216-049-91	RES,CHIP	1K	5%	1/10W
R804	1-216-063-91	RES,CHIP	3.9K	5%	1/10W
R805	1-216-091-00	RES,CHIP	56K	5%	1/10W
R806	1-216-049-91	RES,CHIP	1K	5%	1/10W
R807	1-216-079-00	RES,CHIP	18K	5%	1/10W
R808	1-216-049-91	RES,CHIP	1K	5%	1/10W
R809	1-216-049-91	RES,CHIP	1K	5%	1/10W
R810	1-216-045-00	RES,CHIP	680	5%	1/10W
R811	1-216-047-91	RES,CHIP	820	5%	1/10W
R812	1-216-063-91	RES,CHIP	3.9K	5%	1/10W
R813	1-216-053-00	RES,CHIP	1.5K	5%	1/10W
R814	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R815	1-216-077-00	RES,CHIP	15K	5%	1/10W
R816	1-216-085-00	RES,CHIP	33K	5%	1/10W
R817	1-216-097-91	RES,CHIP	100K	5%	1/10W
R818	1-216-081-00	RES,CHIP	22K	5%	1/10W
R819	1-216-085-00	RES,CHIP	33K	5%	1/10W
R820	1-216-053-00	RES,CHIP	1.5K	5%	1/10W
R821	1-216-049-91	RES,CHIP	1K	5%	1/10W
R822	1-216-081-00	RES,CHIP	22K	5%	1/10W
R823	1-216-037-00	RES,CHIP	330	5%	1/10W
R824	1-216-041-00	RES,CHIP	470	5%	1/10W
R825	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R826	1-216-694-11	METAL CHIP	62K	0.50%	1/10W
R827	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R828	1-216-037-00	RES,CHIP	330	5%	1/10W
R829	1-218-766-11	METAL CHIP	390K	0.50%	1/10W
R830	1-218-755-11	METAL CHIP	130K	0.50%	1/10W
R831	1-216-661-11	METAL CHIP	2.7K	0.50%	1/10W
R832	1-216-637-11	METAL CHIP	270	0.50%	1/10W
R833	1-216-637-11	METAL CHIP	270	0.50%	1/10W
R834	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R835	1-216-069-00	RES,CHIP	6.8K	5%	1/10W
R836	1-216-051-00	RES,CHIP	1.2K	5%	1/10W
R837	1-216-081-00	RES,CHIP	22K	5%	1/10W
R838	1-216-067-00	RES,CHIP	5.6K	5%	1/10W
R839	1-216-676-11	METAL CHIP	11K	0.50%	1/10W
R840	1-216-079-00	RES,CHIP	18K	5%	1/10W
R841	1-216-097-91	RES,CHIP	100K	5%	1/10W
R842	1-216-695-11	METAL CHIP	68K	0.50%	1/10W
R843	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R844	1-216-059-00	RES,CHIP	2.7K	5%	1/10W
R845	1-216-697-91	METAL CHIP	82K	0.50%	1/10W
R846	1-216-679-11	METAL CHIP	15K	0.50%	1/10W
R847	1-216-073-00	RES,CHIP	10K	5%	1/10W
R848	1-216-095-00	RES,CHIP	82K	5%	1/10W
R849	1-216-037-00	RES,CHIP	330	5%	1/10W
R850	1-216-699-11	METAL CHIP	100K	0.50%	1/10W
R851	1-216-085-00	RES,CHIP	33K	5%	1/10W
R852	1-216-094-00	RES,CHIP	75K	5%	1/10W
R853	1-216-049-91	RES,CHIP	1K	5%	1/10W
R854	1-216-675-11	METAL CHIP	10K	0.50%	1/10W
R855	1-216-649-11	METAL CHIP	820	0.50%	1/10W
R856	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R857	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R858	1-216-699-11	METAL CHIP	100K	0.50%	1/10W
R859	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R860	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R861	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R862	1-216-699-11	METAL CHIP	100K	0.50%	1/10W
R863	1-216-674-11	METAL CHIP	9.1K	0.50%	1/10W
R864	1-216-675-11	METAL CHIP	10K	0.50%	1/10W
R865	1-216-649-11	METAL CHIP	820	0.50%	1/10W
R866	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R867	1-216-025-91	RES,CHIP	100	5%	1/10W
R868	1-216-049-91	RES,CHIP	1K	5%	1/10W
R869	1-216-059-00	RES,CHIP	2.7K	5%	1/10W
R870	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R871	1-216-089-91	RES,CHIP	47K	5%	1/10W
R872	1-216-073-00	RES,CHIP	10K	5%	1/10W
R873	1-216-089-91	RES,CHIP	47K	5%	1/10W
R874	1-216-073-00	RES,CHIP	10K	5%	1/10W
R875	1-216-067-00	RES,CHIP	5.6K	5%	1/10W
R876	1-216-061-00	RES,CHIP	3.3K	5%	1/10W
R877	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R878	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R879	1-216-025-91	RES,CHIP	100	5%	1/10W
R880	1-216-097-91	RES,CHIP	100K	5%	1/10W
R881	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R900	1-216-025-91	RES,CHIP	100	5%	1/10W
R901	1-216-097-91	RES,CHIP	100K	5%	1/10W
R902	1-216-097-91	RES,CHIP	100K	5%	1/10W
R903	1-216-097-91	RES,CHIP	100K	5%	1/10W
R904	1-216-025-91	RES,CHIP	100	5%	1/10W
R905	1-216-025-91	RES,CHIP	100	5%	1/10W
R906	1-216-025-91	RES,CHIP	100	5%	1/10W
R907	1-216-097-91	RES,CHIP	100K	5%	1/10W
R908	1-216-121-91	RES,CHIP	1M	5%	1/10W
R909	1-216-097-91	RES,CHIP	100K	5%	1/10W
R910	1-216-097-91	RES,CHIP	100K	5%	1/10W
R911	1-216-097-91	RES,CHIP	100K	5%	1/10W
R912	1-216-687-11	METAL CHIP	33K	0.50%	1/10W
R913	1-216-673-11	METAL CHIP	8.2K	0.50%	1/10W
R914	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R915	1-216-097-91	RES,CHIP	100K	5%	1/10W
R916	1-216-097-91	RES,CHIP	100K	5%	1/10W
R917	1-216-097-91	RES,CHIP	100K	5%	1/10W
R918	1-216-097-91	RES,CHIP	100K	5%	1/10W
R919	1-216-661-11	METAL CHIP	2.7K	0.50%	1/10W
R920	1-216-097-91	RES,CHIP	100K	5%	1/10W
R921	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R922	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W
R923	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R924	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R925	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R926	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R927	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R928	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R929	1-216-675-11	METAL CHIP	10K	0.50%	1/10W
R930	1-216-675-11	METAL CHIP	10K	0.50%	1/10W
R931	1-216-097-91	RES,CHIP	100K	5%	1/10W
R947	1-216-073-00	RES,CHIP	10K	5%	1/10W
R948	1-216-073-00	RES,CHIP	10K	5%	1/10W
R949	1-216-073-00	RES,CHIP	10K	5%	1/10W
R950	1-216-073-00	RES,CHIP	10K	5%	1/10W

BK C

REF NO.	PART NO.	DESCRIPTION			REMARK
R951	1-216-073-00	RES,CHIP	10K	5%	1/10W
R952	1-216-073-00	RES,CHIP	10K	5%	1/10W
R953	1-216-073-00	RES,CHIP	10K	5%	1/10W
R955	1-216-073-00	RES,CHIP	10K	5%	1/10W
R956	1-216-073-00	RES,CHIP	10K	5%	1/10W
R958	1-216-073-00	RES,CHIP	10K	5%	1/10W
R959	1-216-073-00	RES,CHIP	10K	5%	1/10W
R960	1-216-049-91	RES,CHIP	1K	5%	1/10W
R962	1-216-097-91	RES,CHIP	100K	5%	1/10W
R970	1-216-073-00	RES,CHIP	10K	5%	1/10W
R980	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R1001	1-216-685-11	METAL CHIP	27K	0.50%	1/10W
R1002	1-216-627-11	METAL CHIP	100	0.50%	1/10W
R1003	1-216-685-11	METAL CHIP	27K	0.50%	1/10W
R1004	1-216-627-11	METAL CHIP	100	0.50%	1/10W
R1005	1-216-685-11	METAL CHIP	27K	0.50%	1/10W
R1006	1-216-627-11	METAL CHIP	100	0.50%	1/10W
R1007	1-216-685-11	METAL CHIP	27K	0.50%	1/10W
R1008	1-216-627-11	METAL CHIP	100	0.50%	1/10W
R1009	1-216-685-11	METAL CHIP	27K	0.50%	1/10W
R1010	1-216-627-11	METAL CHIP	100	0.50%	1/10W
R1011	1-216-685-11	METAL CHIP	27K	0.50%	1/10W
R1012	1-216-627-11	METAL CHIP	100	0.50%	1/10W
R1013	1-216-685-11	METAL CHIP	27K	0.50%	1/10W
R1014	1-216-627-11	METAL CHIP	100	0.50%	1/10W
R1015	1-216-685-11	METAL CHIP	27K	0.50%	1/10W
R1016	1-216-627-11	METAL CHIP	100	0.50%	1/10W
R1017	1-216-685-11	METAL CHIP	27K	0.50%	1/10W
R1018	1-216-627-11	METAL CHIP	100	0.50%	1/10W
R1019	1-216-685-11	METAL CHIP	27K	0.50%	1/10W
R1020	1-216-627-11	METAL CHIP	100	0.50%	1/10W
R1021	1-216-685-11	METAL CHIP	27K	0.50%	1/10W
R1022	1-216-627-11	METAL CHIP	100	0.50%	1/10W
R1023	1-216-685-11	METAL CHIP	27K	0.50%	1/10W
R1024	1-216-627-11	METAL CHIP	100	0.50%	1/10W
		<TERMINAL BOARD>			
TB1	1-694-371-11	TERMINAL BOARD ASSY, I/O			
		<THERMISTOR>			
TH300	1-807-796-11	THERMISTOR			
		<CRYSTAL>			
X900	1-578-689-21	VIBRATOR			

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REF NO.	PART NO.	DESCRIPTION			REMARK
	* A-1331-724-A	C MOUNT			
		**********			
		<CAPACITOR>			
C504	1-162-114-00	CERAMIC	0.0047MF		2KV
C505	1-162-114-00	CERAMIC	0.0047MF		2KV
C506	1-162-114-00	CERAMIC	0.0047MF		2KV
C507	1-107-888-11	ELECT	47MF	20%	25V
C508	1-107-888-11	ELECT	47MF	20%	25V
C601	1-104-653-11	ELECT	220MF	20%	16V
C602	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C701	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C702	1-107-960-11	ELECT	4.7MF	20%	160V
C703	1-107-943-11	ELECT	10MF	20%	160V
C704	1-107-364-11	MYLAR	0.01MF	10%	200V
C705	1-107-888-11	ELECT	47MF	20%	25V
		<CONNECTOR>			
CN501	1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P			
CN502	1-695-915-11	TAB (CONTACT)			
CN503	1-766-241-11	PIN, CONNECTOR (PC BOARD) 3P			
CN504	* 1-564-507-11	PLUG, CONNECTOR 4P			
CN505	* 1-564-507-11	PLUG, CONNECTOR 4P			
CN506	* 1-564-507-11	PLUG, CONNECTOR 4P			
CN507	* 1-564-506-11	PLUG, CONNECTOR 3P			
CN508	* 1-564-511-11	PLUG, CONNECTOR 8P			
		<DIODE>			
D501	8-719-979-58	DIODE EGP10D			
D601	8-719-404-49	DIODE MA111			
D602	8-719-404-49	DIODE MA111			
D603	8-719-404-49	DIODE MA111			
D604	8-719-404-49	DIODE MA111			
D701	8-719-158-55	DIODE RD15SB			
		<IC>			
IC601	8-759-983-69	IC LM358PS			
IC701	8-759-346-42	IC TDA6101Q/N3			
		<SOCKET>			
J501	⚠ 1-251-116-11	SOCKET, CRT			
		<CHIP CONDUCTOR>			
JR501	1-216-295-91	SHORT	0		
JR502	1-216-295-91	SHORT	0		
JR503	1-216-295-91	SHORT	0		
JR504	1-216-295-91	SHORT	0		
JR505	1-216-295-91	SHORT	0		
JR506	1-216-295-91	SHORT	0		
JR507	1-216-295-91	SHORT	0		
JR508	1-216-295-91	SHORT	0		
		<COIL>			
L501	1-408-595-31	INDUCTOR	2.2µH		
L502	1-408-595-31	INDUCTOR	2.2µH		
L503	1-408-595-31	INDUCTOR	2.2µH		

REF NO.	PART NO.	DESCRIPTION			REMARK
		<TRANSISTOR>			
Q601	8-729-020-07	TRANSISTOR 2SC4686A(LBSONY)			
Q602	8-729-020-07	TRANSISTOR 2SC4686A(LBSONY)			
Q603	8-729-020-07	TRANSISTOR 2SC4686A(LBSONY)			
		<RESISTOR>			
R501	1-219-745-11	CARBON	470	5%	1/2W
R502	1-219-745-11	CARBON	470	5%	1/2W
R503	1-219-745-11	CARBON	470	5%	1/2W
R504	1-219-746-11	CARBON	1K	5%	1/2W
R505	1-219-746-11	CARBON	1K	5%	1/2W
R506	1-219-746-11	CARBON	1K	5%	1/2W
R507	1-219-696-11	METAL OXIDE	30M	5%	1W
R508	1-219-755-11	CARBON	10M	5%	1/2W
R509	1-219-759-11	CARBON	1M	5%	1/2W
R510	1-219-743-11	CARBON	100	5%	1/2W
R511	1-219-743-11	CARBON	100	5%	1/2W
R512	1-219-743-11	CARBON	100	5%	1/2W
R513	1-219-744-11	CARBON	220	5%	1/2W
R514	1-219-744-11	CARBON	220	5%	1/2W
R515	1-219-744-11	CARBON	220	5%	1/2W
R516	1-219-753-11	CARBON	220K	5%	1/2W
R601	1-216-103-00	RES,CHIP	180K	5%	1/10W
R602	1-216-097-91	RES,CHIP	100K	5%	1/10W
R603	1-216-093-00	RES,CHIP	68K	5%	1/10W
R604	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R605	1-216-097-91	RES,CHIP	100K	5%	1/10W
R606	1-216-073-00	RES,CHIP	10K	5%	1/10W
R607	1-208-612-11	METAL OXIDE	10M	5%	1W
R608	1-208-612-11	METAL OXIDE	10M	5%	1W
R609	1-216-073-00	RES,CHIP	10K	5%	1/10W
R610	1-216-103-00	RES,CHIP	180K	5%	1/10W
R611	1-216-073-00	RES,CHIP	10K	5%	1/10W
R612	1-216-073-00	RES,CHIP	10K	5%	1/10W
R613	1-216-111-00	RES,CHIP	390K	5%	1/10W
R614	1-219-759-11	CARBON	1M	5%	1/2W
R615	1-216-081-00	RES,CHIP	22K	5%	1/10W
R701	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W
R702	1-216-679-11	METAL CHIP	15K	0.50%	1/10W
R703	1-216-679-11	METAL CHIP	15K	0.50%	1/10W
R704	1-216-677-11	METAL CHIP	12K	0.50%	1/10W
R705	1-214-903-31	METAL	39K	1%	1/2W
R706	1-216-049-91	RES,CHIP	1K	5%	1/10W
R707	1-216-113-00	RES,CHIP	470K	5%	1/10W
R708	1-219-743-11	CARBON	100	5%	1/2W
		<VARIABLE RESISTOR>			
RV501 ⚠	1-223-410-11	RES, ADJ, METAL FILM 110M			
		<SPARK GAP>			
SG501	1-519-422-11	GAP, SPARK			
SG502	1-519-421-11	GAP, DISCHARGE			
SG503	1-519-421-11	GAP, DISCHARGE			
SG504	1-519-421-11	GAP, DISCHARGE			
SG505	1-519-421-11	GAP, DISCHARGE			
SG506	1-519-421-11	GAP, DISCHARGE			
SG507	1-519-421-11	GAP, DISCHARGE			
SG508	1-519-422-11	GAP, SPARK			

REF NO.	PART NO.	DESCRIPTION			REMARK
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	* A-1346-666-A	E COMPL (14G1/14G5)			
		*********			
	* A-1346-667-A	E COMPL (20G1)			
		*********			
	* X-4033-108-1	HEAT SINK ASSY, DEF			
	* 3-648-057-00	NUT (ISO-4), U			
	* 4-050-794-01	INSULATOR			
	* 4-050-814-01	SHIELD, PWB			
	* 4-053-101-01	SPACER, DY CONNECTOR			
	* 4-381-905-01	SPRING (D)			
	4-381-907-01	INSULATOR (A)			
	4-382-854-01	SCREW (M3X8), P, SW (+)			
	7-322-065-19	RUBBER, SILICON RTV (KE490W)			
	7-682-566-04	SCREW +B 4X20			
	7-682-647-09	SCREW +PS 3X6			
		<CAPACITOR>			
C001	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C004	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C005	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C006	1-110-501-11	CERAMIC CHIP	0.33MF	10%	16V
C008	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C009	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C010	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C011	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C012	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C013	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C014	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C015	1-163-017-00	CERAMIC CHIP	0.0047MF	10%	50V
C016	1-164-346-11	CERAMIC CHIP	1MF		16V
C017	1-163-275-11	CERAMIC CHIP	0.001MF	5%	50V
C018	1-110-501-11	CERAMIC CHIP	0.33MF	10%	16V
C019	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C020	1-163-275-11	CERAMIC CHIP	0.001MF	5%	50V
C021	1-164-695-11	CERAMIC CHIP	0.0022MF	5%	50V
C022	1-107-901-11	ELECT	0.47MF	20%	50V
C023	1-163-275-11	CERAMIC CHIP	0.001MF	5%	50V
C024	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C031	1-128-528-11	ELECT	470MF	20%	25V
C032	1-128-528-11	ELECT	470MF	20%	25V
C033	1-107-910-11	ELECT	100MF	20%	50V
C034	1-137-399-11	FILM	0.1MF	5%	100V
C036	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C051	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C052	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C053	1-102-030-00	CERAMIC	330PF	10%	500V
C054	1-129-765-00	FILM	0.047MF	5%	200V
C055 ⚠	1-162-116-00	CERAMIC	680PF	10%	2KV
C056 ⚠	1-162-134-11	CERAMIC	470PF	10%	2KV
C057	1-136-081-00	FILM	0.012MF	3%	2KV
C058 ⚠	1-162-116-00	CERAMIC	680PF	10%	2KV
C061	1-123-024-21	ELECT	33MF	160V	
C062	1-137-417-11	MYLAR	0.0047MF	10%	200V
C063	1-107-995-11	ELECT	100MF	0	160V
C064	1-109-921-11	CERAMIC	0.0015MF	10%	500V

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REF NO.	PART NO.	DESCRIPTION			REMARK
C065	1-104-496-11	FILM	3.3MF	3%	200V (14G1/14G5)
C065	1-109-915-11	FILM	2.2MF	3%	200V (20G1)
C066	1-104-494-11	FILM	3.9MF	3%	200V (14G1/14G5)
C066	1-109-915-11	FILM	2.2MF	3%	200V (20G1)
C072	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C073	1-163-275-11	CERAMIC CHIP	0.001MF	5%	50V
C074	1-107-906-11	ELECT	10MF	20%	50V
C075	1-107-906-11	ELECT	10MF	20%	50V
C076	1-164-695-11	CERAMIC CHIP	0.0022MF	5%	50V
C077	1-164-346-11	CERAMIC CHIP	1MF		16V
C078	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C079	1-107-888-11	ELECT	47MF	20%	25V
C080	1-107-888-11	ELECT	47MF	20%	25V
C081	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C082	1-164-346-11	CERAMIC CHIP	1MF		16V
C083	1-164-346-11	CERAMIC CHIP	1MF		16V
C086	1-106-375-12	MYLAR	0.022MF	99%	200V
C087	1-106-375-12	MYLAR	0.022MF	99%	200V
C091	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C101	1-128-526-11	ELECT	100MF	20%	25V
C102	1-128-526-11	ELECT	100MF	20%	25V
C103	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C104	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C105	1-164-346-11	CERAMIC CHIP	1MF		16V
C111	1-137-352-11	FILM	0.033MF	5%	100V (14G1/14G5)
C111	1-137-353-11	FILM	0.047MF	5%	100V (20G1)
C112	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C113	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C121	1-102-228-00	CERAMIC	470PF	10%	500V
C122	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C123	1-102-228-00	CERAMIC	470PF	10%	500V
C131	1-164-346-11	CERAMIC CHIP	1MF		16V
C132	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C141	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C151	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C156	1-104-987-11	FILM	0.001MF	10%	200V
C160	1-164-346-11	CERAMIC CHIP	1MF		16V
C161	1-163-275-11	CERAMIC CHIP	0.001MF	5%	50V
C171	1-163-222-11	CERAMIC CHIP	5PF	0.25PF	50V
C172	1-163-222-11	CERAMIC CHIP	5PF	0.25PF	50V
C201	1-107-906-11	ELECT	10MF	20%	50V
C202	1-164-346-11	CERAMIC CHIP	1MF		16V
C203	1-163-037-11	CERAMIC CHIP	0.022MF	10%	50V
C204	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C205	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C208	1-107-906-11	ELECT	10MF	20%	50V
C210	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C231	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C232	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C241	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C242	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C271	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C272	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C273	1-163-275-11	CERAMIC CHIP	0.001MF	5%	50V
C274	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C275	1-163-275-11	CERAMIC CHIP	0.001MF	5%	50V
C276	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C277	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C278	1-163-275-11	CERAMIC CHIP	0.001MF	5%	50V
C301	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C302	1-164-346-11	CERAMIC CHIP	1MF		16V
C303	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C304	1-163-133-00	CERAMIC CHIP	470PF	5%	50V
C321	1-164-505-11	CERAMIC CHIP	2.2MF		16V
C331	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C332	1-163-222-11	CERAMIC CHIP	5PF	0.25PF	50V
C333	1-163-222-11	CERAMIC CHIP	5PF	0.25PF	50V
C501	1-130-481-00	MYLAR	0.0068MF	5%	50V
C502	1-163-275-11	CERAMIC CHIP	0.001MF	5%	50V
C505	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C506	1-163-275-11	CERAMIC CHIP	0.001MF	5%	50V
C507	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C509	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C510	1-163-259-91	CERAMIC CHIP	220PF	5%	50V
C511	1-107-906-11	ELECT	10MF	20%	50V
C512	1-107-907-11	ELECT	22MF	20%	50V
C513	1-164-695-11	CERAMIC CHIP	0.0022MF	5%	50V
C514	1-164-346-11	CERAMIC CHIP	1MF		16V
C515	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C516	1-164-346-11	CERAMIC CHIP	1MF		16V
C517	1-107-888-11	ELECT	47MF	20%	25V
C519	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C521	1-107-906-11	ELECT	10MF	20%	50V
C531	1-106-343-00	MYLAR	0.001MF	10%	200V
C532	1-107-888-11	ELECT	47MF	20%	25V
C533	1-164-346-11	CERAMIC CHIP	1MF		16V
C534	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C541	1-107-906-11	ELECT	10MF	20%	50V
C542	1-107-888-11	ELECT	47MF	20%	25V
C543	1-164-346-11	CERAMIC CHIP	1MF		16V
C544	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V
C551	1-107-995-11	ELECT	100MF	0	160V
C552	1-137-417-11	MYLAR	0.0047MF	10%	200V
C553	1-106-355-12	MYLAR	0.0033MF	10%	200V
C555	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C556	1-162-134-11	CERAMIC	470PF	10%	2KV
C557	1-136-081-00	FILM	0.012MF	3%	2KV
C558	1-162-114-00	CERAMIC	0.0047MF		2KV
C559	1-136-111-00	FILM	1MF	5%	200V
C561	1-104-652-11	ELECT	470MF	20%	10V
C562	1-107-492-11	ELECT	47MF	20%	160V
C571	1-163-275-11	CERAMIC CHIP	0.001MF	5%	50V
C572	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C601	1-113-503-11	CERAMIC CHIP	0.0039MF	5%	25V
C602	1-163-145-00	CERAMIC CHIP	0.0015MF	5%	50V (14G1/14G5)
C602	1-164-695-11	CERAMIC CHIP	0.0022MF	5%	50V (20G1)
C611	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C612	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C613	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C621	1-163-275-11	CERAMIC CHIP	0.001MF	5%	50V
C622	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C623	1-163-275-11	CERAMIC CHIP	0.001MF	5%	50V
C624	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C625	1-163-135-00	CERAMIC CHIP	560PF	5%	50V

REF NO.	PART NO.	DESCRIPTION				REMARK
C626	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V	
C631	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V	
C641	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V	
C642	1-107-906-11	ELECT	10MF	20%	50V	
C643	1-107-906-11	ELECT	10MF	20%	50V	
C644	1-164-346-11	CERAMIC CHIP	1MF		16V	
C701	1-164-232-11	CERAMIC CHIP	0.01MF	10%	50V	(20G1)
C702	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V	(20G1)
C711	1-163-275-11	CERAMIC CHIP	0.001MF	5%	50V	(20G1)
C712	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V	(20G1)
C721	1-163-259-91	CERAMIC CHIP	220PF	5%	50V	(20G1)
C724	1-104-987-11	FILM	0.001MF	10%	200V	(20G1)
C725	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	(20G1)
C741	1-163-222-11	CERAMIC CHIP	5PF	0.25PF	50V	(20G1)
C742	1-163-222-11	CERAMIC CHIP	5PF	0.25PF	50V	(20G1)
C801	1-107-889-11	ELECT	220MF	20%	10V	
C802	1-107-889-11	ELECT	220MF	20%	10V	
C811	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C812	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C813	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C814	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C815	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C816	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C821	1-107-906-11	ELECT	10MF	20%	50V	
C862	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C873	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C911	1-107-889-11	ELECT	220MF	20%	25V	
C912	1-107-889-11	ELECT	220MF	20%	25V	
C913	1-107-889-11	ELECT	220MF	20%	25V	
C916	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C917	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C918	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C919	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C920	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C921	1-128-528-11	ELECT	470MF	20%	16V	
C922	1-128-526-11	ELECT	100MF	20%	16V	
C923	1-128-526-11	ELECT	100MF	20%	16V	
C924	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C925	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C926	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C928	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C929	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C930	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C931	1-107-889-11	ELECT	220MF	20%	25V	
C932	1-107-889-11	ELECT	220MF	20%	25V	
C933	1-107-889-11	ELECT	220MF	20%	25V	
C936	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C938	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C939	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C941	1-128-528-11	ELECT	470MF	20%	16V	
C942	1-128-526-11	ELECT	100MF	20%	16V	
C943	1-128-526-11	ELECT	100MF	20%	16V	
C946	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C947	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C948	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C949	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C950	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C951	1-104-652-11	ELECT	470MF	20%	10V	
C952	1-104-652-11	ELECT	470MF	20%	10V	
C956	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C961	1-104-652-11	ELECT	470MF	20%	10V	
C962	1-128-526-11	ELECT	100MF	20%	16V	
C963	1-104-652-11	ELECT	470MF	20%	10V	
C964	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V	
C965	1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V	
C966	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C967	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C968	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C969	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C970	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C971	1-104-652-11	ELECT	470MF	20%	10V	
C972	1-104-652-11	ELECT	470MF	20%	10V	
C976	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C981	1-104-652-11	ELECT	470MF	20%	10V	
C986	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C987	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C988	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C992	1-128-526-11	ELECT	100MF	20%	16V	
C993	1-128-526-11	ELECT	100MF	20%	16V	
C994	1-128-526-11	ELECT	100MF	20%	16V	
C996	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C997	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C998	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
C999	1-164-005-11	CERAMIC CHIP	0.47MF		25V	
		<CONNECTOR>				
CN007	* 1-580-798-11	CONNECTOR PIN (DY) 6P				
CN501	* 1-564-508-11	PLUG, CONNECTOR 5P				
CN801	1-774-523-11	PIN, CONNECTOR (PC BOARD) 64P				
CN802	1-774-523-11	PIN, CONNECTOR (PC BOARD) 64P				
CN902	1-766-243-11	PIN, CONNECTOR (PC BOARD) 5P				
CN903	1-766-241-11	PIN, CONNECTOR (PC BOARD) 3P				
CN905	1-766-240-11	PIN, CONNECTOR (PC BOARD) 2P				
		<DIODE>				
D031	8-719-908-03	DIODE GP08D				
D061	8-719-037-24	DIODE RD12SB3-T1				
D062	8-719-920-67	DIODE ERC91-02				
D101	8-719-971-20	DIODE ERC38-06				
D102	8-719-971-20	DIODE ERC38-06				
D103	8-719-158-15	DIODE RD5.6SB				
D111	8-719-036-86	DIODE RD4.3SB3-T1				
D112	8-719-404-49	DIODE MA111				
D113	8-719-404-49	DIODE MA111				
D121	8-719-404-49	DIODE MA111				
D122	8-719-036-86	DIODE RD4.3SB3-T1				
D131	8-719-404-49	DIODE MA111				
D151	8-719-404-49	DIODE MA111				
D152	8-719-404-49	DIODE MA111				
D153	8-719-901-83	DIODE 1SS83				
D154	8-719-901-83	DIODE 1SS83				
D201	8-719-404-49	DIODE MA111				
D271	8-719-404-49	DIODE MA111				
D301	8-719-404-49	DIODE MA111				
D321	8-719-404-49	DIODE MA111				
D322	8-719-404-49	DIODE MA111				
D501	8-719-037-24	DIODE RD12SB3-T1				
D502	8-719-404-49	DIODE MA111				
D531	8-719-404-49	DIODE MA111				

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REF NO.	PART NO.	DESCRIPTION	REMARK
D532	8-719-404-49	DIODE MA111	
D533	8-719-404-49	DIODE MA111	
D534	8-719-404-49	DIODE MA111	
D542	8-719-404-49	DIODE MA111	
D543	8-719-404-49	DIODE MA111	
D544	8-719-404-49	DIODE MA111	
D545	8-719-404-49	DIODE MA111	
D551	8-719-037-24	DIODE RD12SB3-T1	
D552	8-719-941-74	DIODE ERB91-02	
D553	8-719-920-67	DIODE ERC91-02	
D554	8-719-404-49	DIODE MA111	
D555	8-719-018-82	DIODE RGP02-20EL-6394	
D611	8-719-404-49	DIODE MA111	
D641	8-719-157-91	DIODE RD3.0SB	
D642	8-719-157-91	DIODE RD3.0SB	
D721	8-719-404-49	DIODE MA111 (20G1)	
D722	8-719-404-49	DIODE MA111 (20G1)	
D801	8-719-158-15	DIODE RD5.6SB	
D802	8-719-404-49	DIODE MA111	
D853	8-719-158-19	DIODE RD6.2SB	
		<FERRITE BEAD>	
FB051	1-543-298-11	FERRITE 0µH	
		<FILTER>	
FL801	1-239-183-11	FILTER, EMI	
FL901	1-236-164-11	ENCAPSULATED COMPONENT	
		<IC>	
IC001	8-752-068-39	IC CXA1840S	
IC031	8-759-192-71	IC STV9379	
IC071	8-759-443-10	IC FA5301BN-TE1	
IC091	8-759-100-96	IC µPC4558G2	
IC101	8-759-803-42	IC LA6500-FA	
IC151	8-752-068-37	IC CXA1726AM	
IC201	8-752-074-64	IC CXA2026AS	
IC202	8-759-981-48	IC TL082M	
IC203	8-759-988-13	IC LM393PS	
IC204	8-759-981-48	IC TL082M	
IC205	8-759-064-36	IC MB88346BPFV	
IC231	8-759-822-38	IC LA6510	
IC301	8-752-068-37	IC CXA1726AM	
IC501	8-759-981-48	IC TL082M	
IC502 ⚠	8-759-908-15	IC TL431CLP	
IC503	8-759-443-10	IC FA5301BN-TE1	
IC531	8-759-988-13	IC LM393PS	
IC602	8-759-038-15	IC MC74HC4538AF	
IC611	8-759-988-13	IC LM393PS	
IC612	8-759-100-96	IC µPC4558G2	
IC613	8-759-186-57	IC TC74VHC175F	
IC621	8-759-981-48	IC TL082M	
IC622	8-759-988-13	IC LM393PS	
IC623	8-759-038-15	IC MC74HC4538AF	
IC625	8-759-011-65	IC MC74HC4053F	
IC627	8-759-186-30	IC TC74VHC14F	
IC628	8-759-186-30	IC TC74VHC14F	
IC641	8-759-100-96	IC µPC4558G2	
IC701	8-752-068-37	IC CXA1726AM (20G1)	
IC702	8-759-822-38	IC LA6510 (20G1)	
IC703	8-759-064-36	IC MB88346BPFV (20G1)	
IC801	8-759-032-26	IC MC74HC125AF	
IC802	8-759-473-55	IC MB89613R-438	
IC803	8-759-156-54	IC X25040SI	
IC921	8-759-231-58	IC TA7812S	
IC941	8-759-701-88	IC NJM7912FA	
IC961	8-759-144-82	IC µPC2405HF	
IC981	8-759-247-67	IC LM2990T-5.0	
IC991	8-759-701-59	IC NJM78M09FA	
		<COIL>	
L051	1-407-365-00	COIL,CHOKE	
L061	1-412-537-31	INDUCTOR 100µH	
L062	1-411-594-11	INDUCTOR 0µH	
L063	1-412-541-21	INDUCTOR 220µH	
L064	1-416-581-11	COIL, HORIZONTAL LINEARITY (20G1)	
L064	1-416-582-11	COIL, HORIZONTAL LINEARITY (14G1/14G5)	
L066	1-412-541-21	INDUCTOR 220µH	
L101	1-459-148-00	COIL	
L551	1-406-659-11	INDUCTOR 0µH	
L552	1-423-855-11	TRANSFORMER, FERRITE (HRT)	
L553	1-406-669-11	INDUCTOR 0µH	
L554	1-407-365-00	COIL,CHOKE	
L951	1-412-541-21	INDUCTOR 220µH	
		<TRANSISTOR>	
Q051	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q053	8-729-119-80	TRANSISTOR 2SC2688-LK	
Q054	8-729-016-32	TRANSISTOR 2SC4927-01	
Q061	8-729-015-28	TRANSISTOR IRFI9630GS	
Q071	8-729-019-85	TRANSISTOR 2SC3392-5-TB	
Q072	8-729-824-26	TRANSISTOR 2SA1338-5-TA	
Q091	8-729-800-32	TRANSISTOR 2SC2362K-G	
Q111	8-729-216-22	TRANSISTOR 2SA1162-G	
Q112	8-729-216-22	TRANSISTOR 2SA1162-G	
Q121	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q122	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q131	8-729-216-22	TRANSISTOR 2SA1162-G	
Q132	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q133	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q151	8-729-216-22	TRANSISTOR 2SA1162-G	
Q152	8-729-216-22	TRANSISTOR 2SA1162-G	
Q155	8-729-140-50	TRANSISTOR 2SC3209LK	
Q156	8-729-800-32	TRANSISTOR 2SC2362K-G	
Q157	8-729-809-29	TRANSISTOR 2SC4159-E	
Q159	8-729-809-26	TRANSISTOR 2SA1606-E	
Q201	8-729-216-22	TRANSISTOR 2SA1162-G	
Q271	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q272	8-729-216-22	TRANSISTOR 2SA1162-G	
Q273	8-729-216-22	TRANSISTOR 2SA1162-G	
Q301	8-729-216-22	TRANSISTOR 2SA1162-G	
Q302	8-729-216-22	TRANSISTOR 2SA1162-G	
Q303	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q304	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q306	8-729-019-01	TRANSISTOR 2SD2394-EF	
Q307	8-729-024-95	TRANSISTOR 2SB1565EF	
Q321	8-729-020-07	TRANSISTOR 2SC4686A(LBSONY)	

REF NO.	PART NO.	DESCRIPTION	REMARK
Q322	8-729-020-07	TRANSISTOR 2SC4686A(LBSONY)	
Q501	8-729-019-85	TRANSISTOR 2SC3392-5-TB	
Q502	8-729-824-26	TRANSISTOR 2SA1338-5-TA	
Q551	8-729-015-28	TRANSISTOR IRFI9630GS	
Q552	8-729-031-37	TRANSISTOR 2SC3837KQ	
Q553	8-729-019-85	TRANSISTOR 2SC3392-5-TB	
Q554	8-729-824-26	TRANSISTOR 2SA1338-5-TA	
Q555	8-729-044-21	TRANSISTOR 2SK2655-01R-F165	
Q561	8-729-019-57	TRANSISTOR 2SA1208S-TP	
Q611	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q621	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q622	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q641	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q721	8-729-216-22	TRANSISTOR 2SA1162-G (20G1)	
Q722	8-729-216-22	TRANSISTOR 2SA1162-G (20G1)	
Q725	8-729-195-82	TRANSISTOR 2SC2958-L (20G1)	
Q726	8-729-800-32	TRANSISTOR 2SC2362K-G (20G1)	
Q727	8-729-019-01	TRANSISTOR 2SD2394-EF (20G1)	
Q729	8-729-024-95	TRANSISTOR 2SB1565EF (20G1)	
Q801	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q802	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q803	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q804	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q807	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q808	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q809	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q815	8-729-027-38	TRANSISTOR DTA144EKA-T146	

<RESISTOR>

REF NO.	PART NO.	DESCRIPTION				REMARK
R001	1-216-673-11	METAL CHIP	8.2K	0.50%	1/10W	
R002	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R003	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R004	1-216-133-00	RES,CHIP	3.3M	5%	1/10W	
R005	1-216-025-91	RES,CHIP	100	5%	1/10W	
R006	1-216-025-91	RES,CHIP	100	5%	1/10W	
R007	1-216-093-00	RES,CHIP	68K	5%	1/10W	
R008	1-216-689-11	RES,CHIP	39K	5%	1/10W	
R009	1-216-057-00	RES,CHIP	2.2K	5%	1/10W	
R010	1-216-025-91	RES,CHIP	100	5%	1/10W	
R011	1-216-065-91	RES,CHIP	4.7K	5%	1/10W	
R012	1-216-025-91	RES,CHIP	100	5%	1/10W	
R013	1-216-095-00	RES,CHIP	82K	5%	1/10W	
R014	1-216-103-00	RES,CHIP	180K	5%	1/10W	
R016	1-216-085-00	RES,CHIP	33K	5%	1/10W	
R017	1-216-059-00	RES,CHIP	2.7K	5%	1/10W	
R019	1-216-041-00	RES,CHIP	470	5%	1/10W	
R020	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R021	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R022	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R023	1-216-049-91	RES,CHIP	1K	5%	1/10W	
R024	1-216-049-91	RES,CHIP	1K	5%	1/10W	
R025	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R026	1-216-049-91	RES,CHIP	1K	5%	1/10W	
R028	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R029	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R030	1-216-129-00	RES,CHIP	2.2M	5%	1/10W	
R031	1-249-377-11	CARBON	0.47	5%	1/4W	F
R032	1-249-377-11	CARBON	0.47	5%	1/4W	F
R033	1-216-682-11	METAL CHIP	20K	0.50%	1/10W	
R034	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W	
R035	1-216-374-00	METAL OXIDE	2.7	5%	2W	F (20G1)
R035	1-216-377-11	METAL OXIDE	4.7	5%	2W	F (14G1/14G5)
R036	1-216-061-00	RES,CHIP	3.3K	5%	1/10W	
R037	1-249-383-11	CARBON	1.5	5%	1/4W	F
R038	1-216-432-00	METAL OXIDE	820	5%	1W	F
R040	1-216-113-00	RES,CHIP	470K	5%	1/10W	
R050	1-216-049-91	RES,CHIP	1K	5%	1/10W	
R051	1-216-041-00	RES,CHIP	470	5%	1/10W	
R052	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R053	1-249-423-11	CARBON	3.3K	5%	1/4W	F
R054	1-215-917-11	METAL OXIDE	1K	5%	3W	F (20G1)
R054	1-215-919-11	METAL OXIDE	2.2K	5%	3W	F (14G1/14G5)
R055	1-215-917-11	METAL OXIDE	1K	5%	3W	F (20G1)
R055	1-215-919-11	METAL OXIDE	2.2K	5%	3W	F (14G1/14G5)
R061	1-249-377-11	CARBON	0.47	5%	1/4W	F
R062	1-249-397-11	CARBON	22	5%	1/4W	F
R063	1-216-081-00	RES,CHIP	22K	5%	1/10W	
R064	1-215-880-00	METAL OXIDE	10	5%	2W	F
R065	1-212-889-00	FUSIBLE	220	5%	1/4W	F
R071	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W	
R072	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R074	1-216-662-11	METAL CHIP	3K	0.50%	1/10W(20G1)	
R074	1-216-663-11	METAL CHIP	3.3K	0.50%	1/10W (14G1/14G5)	
R075	1-216-083-00	RES,CHIP	27K	5%	1/10W	
R076	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R077	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R078	1-216-083-00	RES,CHIP	27K	5%	1/10W	
R079	1-216-069-00	RES,CHIP	6.8K	5%	1/10W	
R080	1-216-685-11	METAL CHIP	27K	0.50%	1/10W	
R081	1-216-049-91	RES,CHIP	1K	5%	1/10W	
R082	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R083	1-249-413-11	CARBON	470	5%	1/4W	F
R084	1-216-113-00	RES,CHIP	470K	5%	1/10W	
R086	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R087	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R088	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R089	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R091	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R095	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R100	1-249-381-11	CARBON	1	5%	1/4W	F
R101	1-249-381-11	CARBON	1	5%	1/4W	F
R102	1-249-381-11	CARBON	1	5%	1/4W	F
R103	1-216-369-00	METAL OXIDE	1	5%	2W	F
R104	1-216-065-91	RES,CHIP	4.7K	5%	1/10W	
R105	1-216-053-00	RES,CHIP	1.5K	5%	1/10W	
R106	1-216-081-00	RES,CHIP	22K	5%	1/10W	
R107	1-216-081-00	RES,CHIP	22K	5%	1/10W	
R108	1-249-393-11	CARBON	10	5%	1/4W	F
R109	1-216-057-00	RES,CHIP	2.2K	5%	1/10W	
R111	1-216-049-91	RES,CHIP	1K	5%	1/10W	
R112	1-216-065-91	RES,CHIP	4.7K	5%	1/10W	
R113	1-216-049-91	RES,CHIP	1K	5%	1/10W	

REF NO.	PART NO.	DESCRIPTION				REMARK
R114	1-216-089-91	RES,CHIP	47K	5%	1/10W	
R115	1-216-065-91	RES,CHIP	4.7K	5%	1/10W	
R116	1-216-089-91	RES,CHIP	47K	5%	1/10W	
R117	1-216-113-00	RES,CHIP	470K	5%	1/10W	
R122	1-216-107-00	RES,CHIP	270K	5%	1/10W	
R126	1-216-107-00	RES,CHIP	270K	5%	1/10W	
R127	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R131	1-216-049-91	RES,CHIP	1K	5%	1/10W	
R132	1-216-089-91	RES,CHIP	47K	5%	1/10W	
R133	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R134	1-216-107-00	RES,CHIP	270K	5%	1/10W	
R142	1-216-089-91	RES,CHIP	47K	5%	1/10W	
R151	1-216-025-91	RES,CHIP	100	5%	1/10W	
R152	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R153	1-216-043-91	RES,CHIP	560	5%	1/10W	
R154	1-216-069-00	RES,CHIP	6.8K	5%	1/10W	
R155	1-216-001-00	RES,CHIP	10	5%	1/10W	
R156	1-215-869-11	METAL OXIDE	1K	5%	1W	F
R157	1-249-377-11	CARBON	0.47	5%	1/4W	F
R158	1-249-377-11	CARBON	0.47	5%	1/4W	F
R159	1-217-371-00	FUSIBLE	0.47	10%	1/4W	
R160	1-215-871-11	METAL OXIDE	2.2K	5%	1W	F
R161	1-216-353-00	METAL OXIDE	2.2	5%	1W	F
R162	1-215-863-11	METAL OXIDE	100	5%	1W	F
R163	1-249-377-11	CARBON	0.47	5%	1/4W	F
R171	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R172	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R173	1-216-081-00	RES,CHIP	22K	5%	1/10W	
R174	1-216-089-91	RES,CHIP	47K	5%	1/10W	
R175	1-216-083-00	RES,CHIP	27K	5%	1/10W	
R176	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R177	1-216-089-91	RES,CHIP	47K	5%	1/10W	
R178	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R179	1-216-097-91	RES,CHIP	100K	5%	1/10W	
R190	1-216-113-00	RES,CHIP	470K	5%	1/10W	
R191	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R201	1-216-025-91	RES,CHIP	100	5%	1/10W	
R202	1-216-025-91	RES,CHIP	100	5%	1/10W	
R203	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R204	1-216-057-00	RES,CHIP	2.2K	5%	1/10W	
R205	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R206	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R207	1-216-693-11	METAL CHIP	56K	0.50%	1/10W	
R208	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R209	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R210	1-216-109-00	RES,CHIP	330K	5%	1/10W	
R211	1-216-025-91	RES,CHIP	100	5%	1/10W	
R221	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R222	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R223	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R224	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R225	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R226	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R227	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R228	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R229	1-216-097-91	RES,CHIP	100K	5%	1/10W	
R230	1-216-025-91	RES,CHIP	100	5%	1/10W	
R231	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R232	1-216-089-91	RES,CHIP	47K	5%	1/10W	
R233	1-216-079-00	RES,CHIP	18K	5%	1/10W	
R234	1-216-063-91	RES,CHIP	3.9K	5%	1/10W	
R235	1-216-298-00	RES,CHIP	2.2	5%	1/10W	
R236	1-216-001-00	RES,CHIP	10	5%	1/10W	
R237	1-249-377-11	CARBON	0.47	5%	1/4W	F
R238	1-249-425-11	CARBON	4.7K	5%	1/4W	F
R239	1-249-392-11	CARBON	8.2	5%	1/4W	F
R241	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R242	1-216-692-11	METAL CHIP	51K	0.50%	1/10W	
R243	1-216-079-00	RES,CHIP	18K	5%	1/10W	
R244	1-216-081-00	RES,CHIP	22K	5%	1/10W	
R245	1-216-298-00	RES,CHIP	2.2	5%	1/10W	
R246	1-216-001-00	RES,CHIP	10	5%	1/10W	
R247	1-249-377-11	CARBON	0.47	5%	1/4W	F
R248	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R249	1-249-405-11	CARBON	100	5%	1/4W	F
R271	1-216-049-91	RES,CHIP	1K	5%	1/10W	
R272	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R273	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R274	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R275	1-216-097-91	RES,CHIP	100K	5%	1/10W	
R276	1-216-103-00	RES,CHIP	180K	5%	1/10W	
R277	1-216-069-00	RES,CHIP	6.8K	5%	1/10W	
R278	1-216-121-91	RES,CHIP	1M	5%	1/10W	
R279	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R280	1-216-089-91	RES,CHIP	47K	5%	1/10W	
R281	1-216-057-00	RES,CHIP	2.2K	5%	1/10W	
R282	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R283	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R284	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R285	1-216-121-91	RES,CHIP	1M	5%	1/10W	
R286	1-216-025-91	RES,CHIP	100	5%	1/10W	
R301	1-216-025-91	RES,CHIP	100	5%	1/10W	
R302	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R303	1-216-069-00	RES,CHIP	6.8K	5%	1/10W	
R304	1-216-051-00	RES,CHIP	1.2K	5%	1/10W	
R305	1-216-053-00	RES,CHIP	1.5K	5%	1/10W	
R306	1-216-097-91	RES,CHIP	100K	5%	1/10W	
R307	1-208-610-11	METAL OXIDE	2M	5%	1W	
R308	1-216-035-00	RES,CHIP	270	5%	1/10W	
R309	1-216-069-00	RES,CHIP	6.8K	5%	1/10W	
R310	1-249-377-11	CARBON	0.47	5%	1/4W	F
R311	1-249-377-11	CARBON	0.47	5%	1/4W	F
R312	1-249-401-11	CARBON	47	5%	1/4W	F
R313	1-216-025-91	RES,CHIP	100	5%	1/10W	
R321	1-216-085-00	RES,CHIP	33K	5%	1/10W	
R322	1-208-610-11	METAL OXIDE	2M	5%	1W	
R323	1-208-612-11	METAL OXIDE	10M	5%	1W	
R324	1-202-830-00	SOLID	10K	20%	1/2W	
R331	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R332	1-216-089-91	RES,CHIP	47K	5%	1/10W	
R333	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R334	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R335	1-216-085-00	RES,CHIP	33K	5%	1/10W	
R336	1-216-085-00	RES,CHIP	33K	5%	1/10W	
R337	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R338	1-216-089-91	RES,CHIP	47K	5%	1/10W	
R339	1-216-089-91	RES,CHIP	47K	5%	1/10W	

REF NO.	PART NO.	DESCRIPTION			REMARK
R340	1-216-073-00	RES,CHIP	10K	5%	1/10W
R341	1-216-097-91	RES,CHIP	100K	5%	1/10W
R342	1-216-089-91	RES,CHIP	47K	5%	1/10W
R343	1-216-089-91	RES,CHIP	47K	5%	1/10W
R344	1-216-073-00	RES,CHIP	10K	5%	1/10W
R345	1-216-085-00	RES,CHIP	33K	5%	1/10W
R346	1-216-089-91	RES,CHIP	47K	5%	1/10W
R347	1-216-089-91	RES,CHIP	47K	5%	1/10W
R501	1-216-097-91	RES,CHIP	100K	5%	1/10W
R502	1-216-681-11	METAL CHIP	18K	0.50%	1/10W
R503	1-216-683-11	METAL CHIP	22K	0.50%	1/10W
R504	1-216-643-11	METAL CHIP	470	0.50%	1/10W (14G1/14G5)
R504	1-216-655-11	METAL CHIP	1.5K	0.50%	1/10W(20G1)
R505	1-216-681-11	METAL CHIP	18K	0.50%	1/10W(20G1)
R505	1-216-683-11	METAL CHIP	22K	0.50%	1/10W (14G1/14G5)
R508	1-216-073-00	RES,CHIP	10K	5%	1/10W
R511	1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R512	1-216-093-00	RES,CHIP	68K	5%	1/10W
R513	1-216-073-00	RES,CHIP	10K	5%	1/10W
R514	1-216-097-91	RES,CHIP	100K	5%	1/10W
R515	1-216-073-00	RES,CHIP	10K	5%	1/10W
R516	1-216-083-00	RES,CHIP	27K	5%	1/10W
R517	1-216-069-00	RES,CHIP	6.8K	5%	1/10W
R518	1-216-685-11	METAL CHIP	27K	0.50%	1/10W
R519	1-216-073-00	RES,CHIP	10K	5%	1/10W
R520	1-216-073-00	RES,CHIP	10K	5%	1/10W
R521	1-249-413-11	CARBON	470	5%	1/4W F
R522	1-249-414-11	CARBON	560	5%	1/4W F
R523	1-216-081-00	RES,CHIP	22K	5%	1/10W
R531	1-218-754-11	METAL CHIP	120K	0.50%	1/10W
R532	1-216-683-11	METAL CHIP	22K	0.50%	1/10W
R533	1-216-685-11	METAL CHIP	27K	0.50%	1/10W
R534	1-216-697-91	METAL CHIP	82K	0.50%	1/10W
R535	1-216-073-00	RES,CHIP	10K	5%	1/10W
R536	1-216-081-00	RES,CHIP	22K	5%	1/10W
R542	1-218-773-11	METAL CHIP	750K	0.50%	1/10W (14G1/14G5)
R542	1-218-774-11	METAL CHIP	820K	0.50%	1/10W(20G1)
R543	1-216-685-11	METAL CHIP	27K	0.50%	1/10W
R544	1-216-684-91	METAL CHIP	24K	0.50%	1/10W (14G1/14G5)
R544	1-216-685-11	METAL CHIP	27K	0.50%	1/10W(20G1)
R545	1-216-698-11	METAL CHIP	91K	0.50%	1/10W (14G1/14G5)
R545	1-216-699-11	METAL CHIP	100K	0.50%	1/10W(20G1)
R546	1-216-073-00	RES,CHIP	10K	5%	1/10W
R547	1-216-081-00	RES,CHIP	22K	5%	1/10W
R548	1-216-097-91	RES,CHIP	100K	5%	1/10W
R551	1-249-377-11	CARBON	0.47	5%	1/4W F
R552	1-216-081-00	RES,CHIP	22K	5%	1/10W
R553	1-249-397-11	CARBON	22	5%	1/4W F
R554	1-212-881-11	FUSIBLE	100	5%	1/4W F
R555	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R556	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R557	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R558	1-216-073-00	RES,CHIP	10K	5%	1/10W
R559	1-216-001-00	RES,CHIP	10	5%	1/10W
R560	1-212-998-00	FUSIBLE	470	5%	1/2W F

REF NO.	PART NO.	DESCRIPTION			REMARK
R561	1-216-073-00	RES,CHIP	10K	5%	1/10W
R562	1-216-105-91	RES,CHIP	220K	5%	1/10W
R563	1-216-073-00	RES,CHIP	10K	5%	1/10W
R571	1-216-097-91	RES,CHIP	100K	5%	1/10W
R572	1-216-097-91	RES,CHIP	100K	5%	1/10W
R601	1-216-107-00	RES,CHIP	270K	5%	1/10W
R602	1-216-081-00	RES,CHIP	22K	5%	1/10W
R604	1-216-075-00	RES,CHIP	12K	5%	1/10W
R605	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R611	1-216-073-00	RES,CHIP	10K	5%	1/10W(20G1)
R611	1-216-679-11	METAL CHIP	15K	0.50%	1/10W (14G1/14G5)
R612	1-216-073-00	RES,CHIP	10K	5%	1/10W(20G1)
R612	1-216-677-11	METAL CHIP	12K	0.5%	1/10W (14G1/14G5)
R613	1-216-073-00	RES,CHIP	10K	5%	1/10W
R614	1-216-073-00	RES,CHIP	10K	5%	1/10W(20G1)
R614	1-216-677-11	METAL CHIP	12K	0.5%	1/10W (14G1/14G5)
R615	1-216-073-00	RES,CHIP	10K	5%	1/10W(20G1)
R615	1-216-679-11	METAL CHIP	15K	0.50%	1/10W (14G1/14G5)
R616	1-216-079-00	RES,CHIP	18K	5%	1/10W
R617	1-216-083-00	RES,CHIP	27K	5%	1/10W
R618	1-216-073-00	RES,CHIP	10K	5%	1/10W
R619	1-216-073-00	RES,CHIP	10K	5%	1/10W
R621	1-216-097-91	RES,CHIP	100K	5%	1/10W
R622	1-216-073-00	RES,CHIP	10K	5%	1/10W
R625	1-216-073-00	RES,CHIP	10K	5%	1/10W
R626	1-216-073-00	RES,CHIP	10K	5%	1/10W
R627	1-216-073-00	RES,CHIP	10K	5%	1/10W
R628	1-216-073-00	RES,CHIP	10K	5%	1/10W
R629	1-216-073-00	RES,CHIP	10K	5%	1/10W
R630	1-216-097-91	RES,CHIP	100K	5%	1/10W
R631	1-216-075-00	RES,CHIP	12K	5%	1/10W
R632	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R633	1-216-073-00	RES,CHIP	10K	5%	1/10W
R634	1-216-089-91	RES,CHIP	47K	5%	1/10W
R641	1-216-107-00	RES,CHIP	270K	5%	1/10W
R642	1-216-073-00	RES,CHIP	10K	5%	1/10W
R645	1-216-073-00	RES,CHIP	10K	5%	1/10W
R646	1-216-073-00	RES,CHIP	10K	5%	1/10W
R647	1-216-073-00	RES,CHIP	10K	5%	1/10W
R648	1-216-073-00	RES,CHIP	10K	5%	1/10W
R649	1-216-073-00	RES,CHIP	10K	5%	1/10W
R650	1-216-073-00	RES,CHIP	10K	5%	1/10W
R651	1-216-073-00	RES,CHIP	10K	5%	1/10W
R652	1-216-025-91	RES,CHIP	100	5%	1/10W
R653	1-216-025-91	RES,CHIP	100	5%	1/10W
R701	1-216-073-00	RES,CHIP	10K	5%	1/10W(20G1)
R702	1-216-089-91	RES,CHIP	47K	5%	1/10W(20G1)
R703	1-216-073-00	RES,CHIP	10K	5%	1/10W(20G1)
R704	1-216-065-91	RES,CHIP	4.7K	5%	1/10W(20G1)
R705	1-216-298-00	RES,CHIP	2.2	5%	1/10W(20G1)
R706	1-216-001-00	RES,CHIP	10	5%	1/10W(20G1)
R707	1-249-377-11	CARBON	0.47	5%	1/4W F (20G1)
R708	1-249-425-11	CARBON	4.7K	5%	1/4W F (20G1)

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REF NO.	PART NO.	DESCRIPTION			REMARK
R709	1-249-393-11	CARBON	10	5%	1/4W F (20G1)
R711	1-216-073-00	RES,CHIP	10K	5%	1/10W(20G1)
R712	1-216-692-11	METAL CHIP	51K	0.50%	1/10W(20G1)
R713	1-216-079-00	RES,CHIP	18K	5%	1/10W(20G1)
R714	1-216-089-91	RES,CHIP	47K	5%	1/10W(20G1)
R715	1-216-298-00	RES,CHIP	2.2	5%	1/10W(20G1)
R716	1-216-001-00	RES,CHIP	10	5%	1/10W(20G1)
R717	1-249-377-11	CARBON	0.47	5%	1/4W F (20G1)
R718	1-249-411-11	CARBON	330	5%	1/4W F (20G1)
R719	1-249-395-11	CARBON	15	5%	1/4W F (20G1)
R721	1-216-073-00	RES,CHIP	10K	5%	1/10W(20G1)
R722	1-216-073-00	RES,CHIP	10K	5%	1/10W(20G1)
R724	1-216-043-91	RES,CHIP	560	5%	1/10W(20G1)
R725	1-216-057-00	RES,CHIP	2.2K	5%	1/10W(20G1)
R726	1-216-001-00	RES,CHIP	10	5%	1/10W(20G1)
R727	1-215-869-11	METAL OXIDE	1K	5%	1W F (20G1)
R728	1-249-377-11	CARBON	0.47	5%	1/4W F (20G1)
R729	1-249-377-11	CARBON	0.47	5%	1/4W F (20G1)
R731	1-249-377-11	CARBON	0.47	5%	1/4W F (20G1)
R732	1-215-877-11	METAL OXIDE	22K	5%	1W F (20G1)
R733	1-216-349-00	METAL OXIDE	1	5%	1W F (20G1)
R741	1-216-692-11	METAL CHIP	51K	0.50%	1/10W(20G1)
R742	1-216-081-00	RES,CHIP	22K	5%	1/10W(20G1)
R743	1-216-081-00	RES,CHIP	22K	5%	1/10W(20G1)
R744	1-216-081-00	RES,CHIP	22K	5%	1/10W(20G1)
R745	1-216-692-11	METAL CHIP	51K	0.50%	1/10W(20G1)
R746	1-216-081-00	RES,CHIP	22K	5%	1/10W(20G1)
R747	1-216-097-91	RES,CHIP	100K	5%	1/10W(20G1)
R748	1-216-692-11	METAL CHIP	51K	0.50%	1/10W(20G1)
R749	1-216-097-91	RES,CHIP	100K	5%	1/10W(20G1)
R750	1-216-692-11	METAL CHIP	51K	0.50%	1/10W(20G1)
R751	1-216-097-91	RES,CHIP	100K	5%	1/10W(20G1)
R752	1-216-097-91	RES,CHIP	100K	5%	1/10W(20G1)
R753	1-216-692-11	METAL CHIP	51K	0.50%	1/10W(20G1)
R754	1-216-097-91	RES,CHIP	100K	5%	1/10W(20G1)
R755	1-216-692-11	METAL CHIP	51K	0.50%	1/10W(20G1)
R756	1-216-097-91	RES,CHIP	100K	5%	1/10W(20G1)
R801	1-216-097-91	RES,CHIP	100K	5%	1/10W
R802	1-216-097-91	RES,CHIP	100K	5%	1/10W
R803	1-216-097-91	RES,CHIP	100K	5%	1/10W
R804	1-216-097-91	RES,CHIP	100K	5%	1/10W
R805	1-216-025-91	RES,CHIP	100	5%	1/10W
R806	1-216-025-91	RES,CHIP	100	5%	1/10W
R807	1-216-025-91	RES,CHIP	100	5%	1/10W
R808	1-216-025-91	RES,CHIP	100	5%	1/10W
R809	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R811	1-216-097-91	RES,CHIP	100K	5%	1/10W
R812	1-216-097-91	RES,CHIP	100K	5%	1/10W
R813	1-216-097-91	RES,CHIP	100K	5%	1/10W
R814	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R815	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R816	1-216-097-91	RES,CHIP	100K	5%	1/10W
R817	1-216-097-91	RES,CHIP	100K	5%	1/10W
R818	1-216-073-00	RES,CHIP	10K	5%	1/10W
R821	1-216-073-00	RES,CHIP	10K	5%	1/10W
R823	1-216-073-00	RES,CHIP	10K	5%	1/10W
R824	1-216-049-91	RES,CHIP	1K	5%	1/10W
R825	1-216-073-00	RES,CHIP	10K	5%	1/10W
R851	1-216-025-91	RES,CHIP	100	5%	1/10W
R852	1-216-025-91	RES,CHIP	100	5%	1/10W
R853	1-216-025-91	RES,CHIP	100	5%	1/10W
R854	1-216-025-91	RES,CHIP	100	5%	1/10W
R855	1-216-097-91	RES,CHIP	100K	5%	1/10W
R856	1-216-041-00	RES,CHIP	470	5%	1/10W
R857	1-216-097-91	RES,CHIP	100K	5%	1/10W
R858	1-216-041-00	RES,CHIP	470	5%	1/10W
R859	1-216-097-91	RES,CHIP	100K	5%	1/10W
R860	1-216-041-00	RES,CHIP	470	5%	1/10W
R861	1-216-097-91	RES,CHIP	100K	5%	1/10W
R862	1-216-049-91	RES,CHIP	1K	5%	1/10W
R863	1-216-049-91	RES,CHIP	1K	5%	1/10W
R864	1-216-041-00	RES,CHIP	470	5%	1/10W
R865	1-216-041-00	RES,CHIP	470	5%	1/10W
R866	1-216-041-00	RES,CHIP	470	5%	1/10W
R867	1-216-041-00	RES,CHIP	470	5%	1/10W
R868	1-216-025-91	RES,CHIP	100	5%	1/10W
R869	1-216-025-91	RES,CHIP	100	5%	1/10W
R870	1-216-025-91	RES,CHIP	100	5%	1/10W
R871	1-216-025-91	RES,CHIP	100	5%	1/10W
R872	1-216-025-91	RES,CHIP	100	5%	1/10W
R873	1-216-081-00	RES,CHIP	22K	5%	1/10W
R901	1-249-377-11	CARBON	0.47	5%	1/4W F
		<TRANSFORMER>			
T051	1-426-668-11	TRANSFORMER, FERRITE (HDT)			
T052	1-431-702-11	TRANSFORMER, FERRITE (HOT)			
T151	1-431-734-11	TRANSFORMER, FERRITE (HLT)			
T301	1-424-555-11	TRANSFORMER, FERRITE (DFT)			
		<TEST PIN>			
TP031	1-537-864-11	PIN, POST			
TP052	1-537-864-11	PIN, POST			
TP151	1-537-864-11	PIN, POST			
TP551	1-537-864-11	PIN, POST			
		<CRYSTAL>			
X001	1-760-895-21	VIBRATOR, CERAMIC			
X801	1-578-689-21	VIBRATOR			

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REF NO.		PART NO.	DESCRIPTION			REMARK
		* A-1316-334-A	G COMPL			
			*********			
		X-4033-109-6	PANEL ASSY, POWER UNIT			
		* X-4033-116-1	FRAME ASSY, POWER			
	⚠	1-251-263-11	INLET, AC			
		1-533-223-11	HOLDER, FUSE (F1)			
		1-900-214-49	CONNECTOR ASSY, VH 7P			
		1-900-214-50	CONNECTOR ASSY, FASTON TAB (IC3P)			
		1-900-236-41	CONNECTOR ASSY,FLOATING FIT 4P			
		2-990-241-02	HOLDER (A), PLUG			
		3-648-057-00	NUT (ISO-4), U			
		* 4-050-794-01	INSULATOR			
		* 4-050-798-01	PLATE, NUT, AC INLET			
		* 4-050-800-01	PLETE (SMALL), NUT			
		* 4-050-801-01	PLETE (LARGE), NUT (D206-209,303,304)			
		* 4-050-814-01	SHIELD, PWB			
		* 4-050-824-01	INSULATOR, POWER UNIT			
		* 4-050-850-01	COVER, POWER UNIT			
		* 4-064-021-01	PLATE, NUT			
		* 4-374-846-01	COVER, CAPACITOR, CAP TYPE			
		4-382-854-01	SCREW (M3X8), P, SW (+)			
		4-382-854-11	SCREW (M3X10), P, SW (+)			
		7-682-566-04	SCREW +B 4X20			
		7-682-647-09	SCREW +PS 3X6			
		7-682-649-09	SCREW +PS 3X10			
		7-682-654-09	SCREW +PS 3X25			
		7-682-661-01	SCREW +PS 4X8			
		7-682-950-09	SCREW +PSW 3X12			
		7-685-872-09	SCREW +BVTT 3X8 (S)			
			<CAPACITOR>			
C1	⚠	1-104-708-11	FILM	0.47MF	20%	250V
C2	⚠	1-113-912-11	CERAMIC	0.0047MF	20%	250V
C3	⚠	1-113-912-11	CERAMIC	0.0047MF	20%	250V
C4	⚠	1-113-912-11	CERAMIC	0.0047MF	20%	250V
C5	⚠	1-113-912-11	CERAMIC	0.0047MF	20%	250V
C6	⚠	1-104-708-11	FILM	0.47MF	20%	250V
C7	⚠	1-113-924-11	CERAMIC	0.0047MF	20%	250V
C8	⚠	1-113-924-11	CERAMIC	0.0047MF	20%	250V
C9	⚠	1-113-924-11	CERAMIC	0.0047MF	20%	250V
C10	⚠	1-113-924-11	CERAMIC	0.0047MF	20%	250V
C11	⚠	1-137-484-11	FILM	0.47MF	10%	630V
C12		1-107-906-11	ELECT	10MF	20%	50V
C14		1-104-653-11	ELECT	220MF	20%	16V
C15		1-107-906-11	ELECT	10MF	20%	50V
C16		1-107-888-11	ELECT	47MF	20%	25V
C17		1-107-906-11	ELECT	10MF	20%	50V
C31		1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C32		1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C33		1-163-009-11	CERAMIC CHIP	0.001MF	10%	50V
C34		1-136-921-11	FILM	1MF	5%	50V
C35		1-136-921-11	FILM	1MF	5%	50V
C36		1-165-319-11	CERAMIC CHIP	0.1MF		50V
C37		1-163-989-11	CERAMIC CHIP	0.033MF	10%	25V
C38		1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C39		1-164-489-11	CERAMIC CHIP	0.22MF	10%	16V
C40		1-104-539-11	FILM CHIP	0.001MF	5%	50V
C41		1-163-031-11	CERAMIC CHIP	0.01MF		50V
C42		1-107-910-11	ELECT	100MF	20%	35V
C43		1-113-707-11	ELECT(BLOCK)	220MF	20%	450V
C44		1-107-906-11	ELECT	10MF	20%	50V
C45		1-107-715-11	ELECT	22MF	20%	25V
C46		1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C47		1-107-907-11	ELECT	22MF	20%	50V
C101		1-107-888-11	ELECT	47MF	20%	25V
C102		1-128-526-11	ELECT	100MF	20%	16V
C103		1-107-906-11	ELECT	10MF	20%	50V
C104		1-107-888-11	ELECT	47MF	20%	25V
C105		1-163-031-11	CERAMIC CHIP	0.01MF		50V
C200		1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C201		1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C203		1-104-539-11	FILM CHIP	0.001MF	5%	50V
C204		1-107-907-11	ELECT	22MF	20%	50V
C205		1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C206		1-107-888-11	ELECT	47MF	20%	25V
C207		1-136-161-00	FILM	0.047MF	5%	50V
C208		1-129-718-00	FILM	0.022MF	5%	630V
C211		1-107-913-11	ELECT	470MF	20%	50V
C212		1-102-038-00	CERAMIC	0.001MF	500V	
C213		1-102-038-00	CERAMIC	0.001MF	500V	
C214		1-107-880-11	ELECT	4700MF	20%	10V
C215		1-107-880-11	ELECT	4700MF	20%	10V
C216		1-163-037-11	CERAMIC CHIP	0.022MF	10%	50V
C217		1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C218		1-102-038-00	CERAMIC	0.001MF	500V	
C219		1-102-038-00	CERAMIC	0.001MF	500V	
C220		1-107-890-11	ELECT	2200MF	20%	25V
C221		1-107-890-11	ELECT	2200MF	20%	25V
C222		1-107-880-11	ELECT	4700MF	20%	10V
C223		1-107-880-11	ELECT	4700MF	20%	10V
C224		1-102-038-00	CERAMIC	0.001MF	500V	
C225		1-102-038-00	CERAMIC	0.001MF	500V	
C226		1-107-880-11	ELECT	4700MF	20%	10V
C227		1-107-880-11	ELECT	4700MF	20%	10V
C228		1-107-890-11	ELECT	2200MF	20%	25V
C229		1-107-890-11	ELECT	2200MF	20%	25V
C301		1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C302		1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C303		1-104-539-11	FILM CHIP	0.001MF	5%	50V
C304		1-107-907-11	ELECT	22MF	20%	50V
C305		1-164-004-11	CERAMIC CHIP	0.1MF	10%	25V
C306		1-107-888-11	ELECT	47MF	20%	25V
C307		1-107-909-11	ELECT	47MF	20%	10V
C308		1-129-718-00	FILM	0.022MF	5%	630V
C311		1-102-038-00	CERAMIC	0.001MF	500V	
C312		1-102-038-00	CERAMIC	0.001MF	500V	
C313		1-107-877-11	ELECT	1000MF	20%	10V
C314		1-107-877-11	ELECT	1000MF	20%	10V
C315		1-162-116-00	CERAMIC	680PF	10%	2KV
C316		1-162-116-00	CERAMIC	680PF	10%	2KV
C317		1-107-947-11	ELECT	220MF	20%	160V
C318		1-107-947-11	ELECT	220MF	20%	160V
C319		1-136-169-00	FILM	0.22MF	5%	50V
C320		1-107-372-11	FILM	0.22MF	10%	200V
C321		1-107-909-11	ELECT	47MF	20%	10V
C324		1-163-031-11	CERAMIC CHIP	0.01MF		50V

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REF NO.		PART NO.	DESCRIPTION			REMARK
C325		1-163-031-11	CERAMIC CHIP	0.01MF		50V
C802		1-164-005-11	CERAMIC CHIP	0.47MF		16V
C804		1-107-888-11	ELECT	47MF	20%	25V
C805		1-107-906-11	ELECT	10MF	20%	50V
C806		1-107-888-11	ELECT	47MF	20%	25V
C807		1-107-906-11	ELECT	10MF	20%	50V
C809		1-107-906-11	ELECT	10MF	20%	50V
C810		1-107-906-11	ELECT	10MF	20%	50V
C901	⚠	1-113-912-11	CERAMIC	0.0047MF	20%	250V
C902	⚠	1-113-912-11	CERAMIC	0.0047MF	20%	250V
C903		1-107-888-11	ELECT	47MF	20%	25V
C904		1-128-526-11	ELECT	100MF	20%	16V
			<CONNECTOR>			
CN1	⚠	1-564-321-00	PIN, CONNECTOR 2P			
CN2		1-568-106-11	PIN, CONNECTOR 4P			
CN3		1-774-523-11	PIN, CONNECTOR (PC BOARD) 64P			
			<DIODE>			
D1	⚠	8-719-510-53	DIODE D4SB60L			
D2		8-719-110-52	DIODE RD20ESB1			
D3		8-719-110-61	DIODE RD24ESB1			
D4		8-719-053-43	DIODE SLR-325VCT31			
D5		8-719-510-02	DIODE D1NS4			
D6		8-719-510-02	DIODE D1NS4			
D8		8-719-404-49	DIODE MA111			
D9		8-719-510-02	DIODE D1NS4			
D31		8-719-510-02	DIODE D1NS4			
D32		8-719-106-23	DIODE RD7.5M-B2			
D33		8-719-510-02	DIODE D1NS4			
D34		8-719-110-61	DIODE RD24ESB1			
D35		8-719-510-02	DIODE D1NS4			
D36		8-719-029-04	DIODE D5L60			
D101		8-719-911-19	DIODE 1SS119-25			
D102		8-719-404-49	DIODE MA111			
D103		8-719-053-43	DIODE SLR-325VCT31			
D104		8-719-404-49	DIODE MA111			
D105		8-719-158-49	DIODE RD12SB2			
D106		8-719-110-50	DIODE RD18ESB3			
D202		8-719-988-55	DIODE RGP15K-6179			
D203		8-719-979-58	DIODE EGP10D			
D204		8-719-510-37	DIODE D5LC20U			
D205		8-719-060-27	DIODE SLR-325MCT31			
D206		8-719-510-37	DIODE D5LC20U			
D207		8-719-510-37	DIODE D5LC20U			
D208		8-719-510-37	DIODE D5LC20U			
D209		8-719-510-37	DIODE D5LC20U			
D210		8-719-404-49	DIODE MA111			
D211		8-719-404-49	DIODE MA111			
D212		8-719-110-50	DIODE RD18ESB3			
D300		8-719-404-49	DIODE MA111			
D302		8-719-988-55	DIODE RGP15K-6179			
D303		8-719-031-79	DIODE D5SC4M			
D304		8-719-029-04	DIODE D5L60			
D305		8-719-404-49	DIODE MA111			
D306		8-719-404-49	DIODE MA111			
D307		8-719-110-50	DIODE RD18ESB3			
D801		8-719-060-27	DIODE SLR-325MCT31			
D803		8-719-404-49	DIODE MA111			
D804		8-719-404-49	DIODE MA111			
D806		8-719-404-49	DIODE MA111			
D807		8-719-404-49	DIODE MA111			
D810		8-719-106-23	DIODE RD7.5M-B2			
D811		8-719-159-13	DIODE RD5.1SB3-T2			
D812		8-719-159-13	DIODE RD5.1SB3-T2			
D901		8-719-911-19	DIODE 1SS119-25			
			<FUSE>			
F1	⚠	1-576-231-11	FUSE (H.B.C.) 4A/250V			
F201	⚠	1-533-987-11	FUSE, MICRO 5A/125V			
F202	⚠	1-533-987-11	FUSE, MICRO 5A/125V			
			<FERRITE BEAD>			
FB31		1-410-396-41	FERRITE	0µH		
FB32		1-410-396-41	FERRITE	0µH		
FB33		1-410-396-41	FERRITE	0µH		
FB34		1-410-396-41	FERRITE	0µH		
FB201		1-410-396-41	FERRITE	0µH		
FB301		1-410-396-41	FERRITE	0µH		
			<IC>			
IC1		8-759-982-15	IC RC7815FA			
IC31		8-759-354-43	IC TK83854D			
IC32		8-759-100-96	IC µPC4558G2			
IC101		8-759-988-13	IC LM393PS			
IC201		8-759-914-04	IC TL494CNS			
IC202		8-759-908-15	IC TL431CLP			
IC203		8-759-908-15	IC TL431CLP			
IC301		8-759-914-04	IC TL494CNS			
IC302		8-759-908-15	IC TL431CLP			
IC801		8-759-085-67	IC LM339NS			
IC802		8-759-908-15	IC TL431CLP			
IC803		8-759-424-24	IC MC74HC147FEL			
IC804		8-759-908-15	IC TL431CLP			
IC901		8-759-231-58	IC TA7812S			
			<COIL>			
L201		1-406-661-11	INDUCTOR	0µH		
L301		1-406-661-11	INDUCTOR	0µH		
L302		1-406-661-11	INDUCTOR	0µH		
			<PHOTO COUPLER>			
PH201	⚠	8-749-010-64	PHOTO COUPLER PC123F2			
PH301	⚠	8-749-010-64	PHOTO COUPLER PC123F2			
PH802	⚠	8-749-010-64	PHOTO COUPLER PC123F2			
PH803	⚠	8-749-010-64	PHOTO COUPLER PC123F2			
PH901	⚠	8-749-010-64	PHOTO COUPLER PC123F2			
			<TRANSISTOR>			
Q1		8-729-043-95	TRANSISTOR 2SC3840(3)			
Q2		8-729-043-95	TRANSISTOR 2SC3840(3)			
Q4		8-729-043-95	TRANSISTOR 2SC3840(3)			
Q5		8-729-118-44	TRANSISTOR 2SA1413-K			
Q6		8-729-027-87	TRANSISTOR 2SB1261-K			
Q7		1-801-806-11	TRANSISTOR DTC144EKA-T146			
Q8		8-729-118-44	TRANSISTOR 2SA1413-K			
Q9		1-801-806-11	TRANSISTOR DTC144EKA-T146			
Q31		8-729-044-22	TRANSISTOR 2SK2209-01R-F165			
Q32		8-729-120-28	TRANSISTOR 2SC1623-L5L6			

REF NO.	PART NO.	DESCRIPTION	REMARK
Q101	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q102	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q103	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q104	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q105	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q106	8-729-216-22	TRANSISTOR 2SA1162-G	
Q107	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q108	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q109	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q110	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q203	8-729-019-85	TRANSISTOR 2SC3392-5-TB	
Q204	8-729-824-26	TRANSISTOR 2SA1338-5-TA	
Q205	8-729-044-62	TRANSISTOR 2SK2766-01R-F165	
Q206	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q207	8-729-820-73	TRANSISTOR 2SC3746	
Q208	8-729-112-61	TRANSISTOR 2SA1441-L	
Q209	8-729-900-53	TRANSISTOR DTC114EK	
Q210	8-729-112-61	TRANSISTOR 2SA1441-L	
Q211	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q212	8-729-820-73	TRANSISTOR 2SC3746	
Q213	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q214	8-729-820-73	TRANSISTOR 2SC3746	
Q215	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q300	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q301	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q303	8-729-019-85	TRANSISTOR 2SC3392-5-TB	
Q304	8-729-824-26	TRANSISTOR 2SA1338-5-TA	
Q305	8-729-044-62	TRANSISTOR 2SK2766-01R-F165	
Q306	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q801	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q802	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q805	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q806	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q807	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q808	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q809	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q810	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q811	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q812	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q813	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q814	8-729-027-31	TRANSISTOR DTA124EKA-T146	
Q815	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q816	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q817	8-729-027-38	TRANSISTOR DTA144EKA-T146	
Q901	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q902	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q903	1-801-806-11	TRANSISTOR DTC144EKA-T146	
Q904	1-801-806-11	TRANSISTOR DTC144EKA-T146	
		<RESISTOR>	
R1 ⚠	1-202-884-11	SOLID 820K 20% 1/2W	
R2	1-202-962-11	CEMENTED 3.3 5% 10W	
R3	1-215-900-11	METAL OXIDE 22K 5% 2W	F
R4	1-215-900-11	METAL OXIDE 22K 5% 2W	F
R5	1-215-900-11	METAL OXIDE 22K 5% 2W	F
R6	1-247-891-00	CARBON 330K 5% 1/4W	
R7	1-247-891-00	CARBON 330K 5% 1/4W	
R8	1-247-891-00	CARBON 330K 5% 1/4W	
R9	1-216-073-00	RES,CHIP 10K 5% 1/10W	
R10	1-216-073-00	RES,CHIP 10K 5% 1/10W	
R11	1-247-883-00	CARBON 150K 5% 1/4W	
R12	1-247-883-00	CARBON 150K 5% 1/4W	
R13	1-247-883-00	CARBON 150K 5% 1/4W	
R14	1-249-441-11	CARBON 100K 5% 1/4W	
R15	1-249-441-11	CARBON 100K 5% 1/4W	
R16	1-249-437-11	CARBON 47K 5% 1/4W	
R17	1-216-073-00	RES,CHIP 10K 5% 1/10W	
R18	1-216-073-00	RES,CHIP 10K 5% 1/10W	
R19	1-260-332-51	CARBON 2.2K 5% 1/2W	
R20	1-260-332-51	CARBON 2.2K 5% 1/2W	
R21	1-249-441-11	CARBON 100K 5% 1/4W	
R22	1-249-441-11	CARBON 100K 5% 1/4W	
R23	1-249-437-11	CARBON 47K 5% 1/4W	
R31	1-219-728-11	METAL 0.22 10% 5W	
R33	1-216-653-11	METAL CHIP 1.2K 0.50% 1/10W	
R34	1-216-672-11	METAL CHIP 7.5K 0.50% 1/10W	
R35	1-216-081-00	RES,CHIP 22K 5% 1/10W	
R36	1-216-665-11	METAL CHIP 3.9K 0.50% 1/10W	
R37	1-216-665-11	METAL CHIP 3.9K 0.50% 1/10W	
R38	1-216-109-00	RES,CHIP 330K 5% 1/10W	
R39	1-216-109-00	RES,CHIP 330K 5% 1/10W	
R40	1-216-109-00	RES,CHIP 330K 5% 1/10W	
R41	1-216-105-91	RES,CHIP 220K 5% 1/10W	
R42	1-216-109-00	RES,CHIP 330K 5% 1/10W	
R43	1-216-109-00	RES,CHIP 330K 5% 1/10W	
R44	1-216-109-00	RES,CHIP 330K 5% 1/10W	
R45	1-216-097-91	RES,CHIP 100K 5% 1/10W	
R46	1-216-081-00	RES,CHIP 22K 5% 1/10W	
R47	1-216-081-00	RES,CHIP 22K 5% 1/10W	
R48	1-216-089-91	RES,CHIP 47K 5% 1/10W	
R49	1-216-109-00	RES,CHIP 330K 5% 1/10W	
R50	1-216-677-11	METAL CHIP 12K 0.50% 1/10W	
R51	1-249-393-11	CARBON 10 5% 1/4W	F
R52	1-249-429-11	CARBON 10K 5% 1/4W	
R53	1-215-481-00	METAL 330K 1% 1/4W	
R54	1-215-481-00	METAL 330K 1% 1/4W	
R55	1-215-481-00	METAL 330K 1% 1/4W	
R56	1-216-679-11	METAL CHIP 15K 0.50% 1/10W	
R57	1-216-661-11	METAL CHIP 2.7K 0.50% 1/10W	
R58	1-215-477-00	METAL 220K 1% 1/4W	
R59	1-215-477-00	METAL 220K 1% 1/4W	
R60	1-215-477-00	METAL 220K 1% 1/4W	
R61	1-216-677-11	METAL CHIP 12K 0.50% 1/10W	
R62	1-216-673-11	METAL CHIP 8.2K 0.50% 1/10W	
R63	1-216-645-11	METAL CHIP 560 0.50% 1/10W	
R64	1-216-089-91	RES,CHIP 47K 5% 1/10W	
R65	1-216-097-91	RES,CHIP 100K 5% 1/10W	
R66	1-215-477-00	METAL 220K 1% 1/4W	
R67	1-215-477-00	METAL 220K 1% 1/4W	
R68	1-215-477-00	METAL 220K 1% 1/4W	
R69	1-216-673-11	METAL CHIP 8.2K 0.50% 1/10W	
R70	1-249-393-11	CARBON 10 5% 1/4W	F
R73	1-216-073-00	RES,CHIP 10K 5% 1/10W	
R74	1-211-881-11	FUSIBLE 0.47 10% 1/2W	
R101	1-215-865-11	METAL OXIDE 220 5% 1W	F
R102	1-216-089-91	RES,CHIP 47K 5% 1/10W	
R103	1-216-081-00	RES,CHIP 22K 5% 1/10W	

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REF NO.	PART NO.	DESCRIPTION				REMARK
R104	1-216-081-00	RES,CHIP	22K	5%	1/10W	
R105	1-216-055-00	RES,CHIP	1.8K	5%	1/10W	
R106	1-216-097-91	RES,CHIP	100K	5%	1/10W	
R107	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R108	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R109	1-216-081-00	RES,CHIP	22K	5%	1/10W	
R110	1-216-065-91	RES,CHIP	4.7K	5%	1/10W	
R111	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R112	1-216-675-11	METAL CHIP	10K	0.50%	1/10W	
R113	1-216-081-00	RES,CHIP	22K	5%	1/10W	
R114	1-216-049-91	RES,CHIP	1K	5%	1/10W	
R115	1-216-049-91	RES,CHIP	1K	5%	1/10W	
R200	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R201	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R202	1-216-017-00	RES,CHIP	47	5%	1/10W	
R203	1-216-041-00	RES,CHIP	470	5%	1/10W	
R204	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R206	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R207	1-216-057-00	RES,CHIP	2.2K	5%	1/10W	
R208	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W	
R209	1-216-677-11	METAL CHIP	12K	0.50%	1/10W	
R210	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R211	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R212	1-216-033-00	RES,CHIP	220	5%	1/10W	
R213	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R214	1-216-033-00	RES,CHIP	220	5%	1/10W	
R215	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R216	1-249-393-11	CARBON	10	5%	1/4W	F
R217	1-249-429-11	CARBON	10K	5%	1/4W	
R218	1-249-441-11	CARBON	100K	5%	1/4W	
R219	1-249-417-11	CARBON	1K	5%	1/4W	
R220	1-219-728-11	METAL	0.22	10%	5W	
R221	1-215-904-11	METAL OXIDE	100K	5%	2W	F
R222	1-215-904-11	METAL OXIDE	100K	5%	2W	F
R223	1-215-904-11	METAL OXIDE	100K	5%	2W	F
R224	1-215-904-11	METAL OXIDE	100K	5%	2W	F
R228	1-260-288-11	CARBON	0.47	5%	1/2W	
R229	1-215-882-00	METAL OXIDE	22	5%	2W	F
R230	1-216-057-00	RES,CHIP	2.2K	5%	1/10W	
R231	1-216-001-00	RES,CHIP	10	5%	1/10W	
R232	1-216-061-00	RES,CHIP	3.3K	5%	1/10W	
R233	1-216-025-91	RES,CHIP	100	5%	1/10W	
R234	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R235	1-216-025-91	RES,CHIP	100	5%	1/10W	
R236	1-216-677-11	METAL CHIP	12K	0.50%	1/10W	
R237	1-215-886-11	METAL OXIDE	100	5%	2W	F
R240	1-215-886-11	METAL OXIDE	100	5%	2W	F
R246	1-247-791-91	CARBON	22	5%	1/4W	
R247	1-247-791-91	CARBON	22	5%	1/4W	
R248	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R249	1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W	
R250	1-215-891-11	METAL OXIDE	680	5%	2W	F
R251	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R252	1-249-413-11	CARBON	470	5%	1/4W	F
R253	1-249-413-11	CARBON	470	5%	1/4W	F
R254	1-247-747-11	CARBON	470	5%	1/2W	
R255	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R256	1-249-411-11	CARBON	330	5%	1/4W	F
R257	1-247-747-11	CARBON	470	5%	1/2W	
R258	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R259	1-249-415-11	CARBON	680	5%	1/4W	F
R260	1-249-415-11	CARBON	680	5%	1/4W	F
R261	1-215-891-11	METAL OXIDE	680	5%	2W	F
R262	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R263	1-249-415-11	CARBON	680	5%	1/4W	F
R264	1-249-415-11	CARBON	680	5%	1/4W	F
R265	1-249-415-11	CARBON	680	5%	1/4W	F
R266	1-249-415-11	CARBON	680	5%	1/4W	F
R290	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R291	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R301	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R302	1-216-029-00	RES,CHIP	150	5%	1/10W	
R303	1-216-041-00	RES,CHIP	470	5%	1/10W	
R304	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R306	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R307	1-216-057-00	RES,CHIP	2.2K	5%	1/10W	
R308	1-216-669-11	METAL CHIP	5.6K	0.50%	1/10W	
R309	1-216-677-11	METAL CHIP	12K	0.50%	1/10W	
R310	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R311	1-216-683-11	METAL CHIP	22K	0.50%	1/10W	
R312	1-216-033-00	RES,CHIP	220	5%	1/10W	
R313	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R314	1-216-033-00	RES,CHIP	220	5%	1/10W	
R315	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R316	1-249-393-11	CARBON	10	5%	1/4W	F
R317	1-249-429-11	CARBON	10K	5%	1/4W	
R318	1-249-441-11	CARBON	100K	5%	1/4W	
R319	1-249-417-11	CARBON	1K	5%	1/4W	
R320	1-219-728-11	METAL	0.22	10%	5W	
R321	1-215-904-11	METAL OXIDE	100K	5%	2W	F
R322	1-215-904-11	METAL OXIDE	100K	5%	2W	F
R323	1-215-904-11	METAL OXIDE	100K	5%	2W	F
R324	1-215-904-11	METAL OXIDE	100K	5%	2W	F
R328	1-215-882-00	METAL OXIDE	22	5%	2W	F
R329	1-260-288-11	CARBON	0.47	5%	1/2W	
R331	1-216-736-11	METAL	270	1%	10W	
R332	1-215-901-00	METAL OXIDE	33K	5%	2W	F
R333	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R334	1-249-405-11	CARBON	100	5%	1/4W	F
R335	1-249-405-11	CARBON	100	5%	1/4W	F
R336	1-214-905-11	METAL	47K	1%	1/2W	
R337	1-214-905-11	METAL	47K	1%	1/2W	
R338	1-216-658-11	METAL CHIP	2K	0.50%	1/10W	
R339	1-219-728-11	METAL	0.22	10%	5W	
R340	1-216-651-11	METAL CHIP	1K	0.50%	1/10W	
R801	1-216-049-91	RES,CHIP	1K	5%	1/10W	
R802	1-216-057-00	RES,CHIP	2.2K	5%	1/10W	
R803	1-216-065-91	RES,CHIP	4.7K	5%	1/10W	
R804	1-216-053-00	RES,CHIP	1.5K	5%	1/10W	
R805	1-216-121-91	RES,CHIP	1M	5%	1/10W	
R806	1-216-073-00	RES,CHIP	10K	5%	1/10W	
R807	1-216-061-00	RES,CHIP	3.3K	5%	1/10W	
R808	1-216-073-00	RES,CHIP	10K	5%	1/10W	

REF NO.		PART NO.	DESCRIPTION			REMARK
R809		1-216-073-00	RES,CHIP	10K	5%	1/10W
R811		1-216-661-11	METAL CHIP	2.7K	0.50%	1/10W
R812		1-216-658-11	METAL CHIP	2K	0.50%	1/10W
R813		1-216-049-91	RES,CHIP	1K	5%	1/10W
R814		1-214-921-00	METAL	220K	1%	1/2W
R815		1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R816		1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R817		1-216-677-11	METAL CHIP	12K	0.50%	1/10W
R818		1-216-683-11	METAL CHIP	22K	0.50%	1/10W
R819		1-216-667-11	METAL CHIP	4.7K	0.50%	1/10W
R820		1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R821		1-216-073-00	RES,CHIP	10K	5%	1/10W
R823		1-216-049-91	RES,CHIP	1K	5%	1/10W
R824		1-216-061-00	RES,CHIP	3.3K	5%	1/10W
R825		1-216-679-11	METAL CHIP	15K	0.50%	1/10W
R826		1-216-659-11	METAL CHIP	2.2K	0.50%	1/10W
R827		1-216-061-00	RES,CHIP	3.3K	5%	1/10W
R830		1-216-025-91	RES,CHIP	100	5%	1/10W
R831		1-216-025-91	RES,CHIP	100	5%	1/10W
R832		1-216-025-91	RES,CHIP	100	5%	1/10W
R833		1-216-025-91	RES,CHIP	100	5%	1/10W
R901		1-202-725-00	SOLID	3.3M	20%	1/2W
R902		1-202-725-00	SOLID	3.3M	20%	1/2W
R903		1-216-073-00	RES,CHIP	10K	5%	1/10W
R904		1-216-073-00	RES,CHIP	10K	5%	1/10W
R906		1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R907		1-216-061-00	RES,CHIP	3.3K	5%	1/10W
			<RELAY>			
RY1	⚠	1-515-738-11	RELAY			
RY901	⚠	1-515-738-11	RELAY			
			<SWITCH>			
S901	⚠	1-762-300-11	SWITCH, AC POWER SEESAW			
			<TRANSFORMER>			
T1	⚠	1-424-461-11	TRANSFORMER, LINE FILTER			
T2	⚠	1-424-461-11	TRANSFORMER, LINE FILTER			
T3	⚠	1-429-283-11	TRANSFORMER, CONVERTER (PFT)			
T201	⚠	1-431-703-11	TRANSFORMER, CONVERTER			
T301	⚠	1-431-704-11	TRANSFORMER, CONVERTER			
			<THERMISTOR>			
THP1	⚠	1-808-059-31	THERMISTOR, POSITIVE			
			<TEST PIN>			
TP31		1-537-864-11	PIN, POST			
TP32		1-537-864-11	PIN, POST			
TP33		1-537-864-11	PIN, POST			
TP201		1-537-864-11	PIN, POST			
TP202		1-537-864-11	PIN, POST			
TP207		1-537-864-11	PIN, POST			
TP301		1-537-864-11	PIN, POST			
TP302		1-537-864-11	PIN, POST			
TP303		1-537-864-11	PIN, POST			
TP304		1-537-864-11	PIN, POST			
TP305		1-537-864-11	PIN, POST			

REF NO.		PART NO.	DESCRIPTION			REMARK
			<VARISTOR>			
VDR1	⚠	1-801-073-31	VARISTOR TNR14V471K660			
VDR2	⚠	1-810-622-11	VARISTOR			
**********						
	*	A-1372-133-A	MOUNTED PWB, HA (14G5,BKM-10R)			
			**********			
			<CAPACITOR>			
C201		1-126-206-11	ELECT CHIP	100MF	20%	6.3V
C202		1-126-206-11	ELECT CHIP	100MF	20%	6.3V
C203		1-126-206-11	ELECT CHIP	100MF	20%	6.3V
C204		1-126-206-11	ELECT CHIP	100MF	20%	6.3V
C205		1-126-206-11	ELECT CHIP	100MF	20%	6.3V
C206		1-126-206-11	ELECT CHIP	100MF	20%	6.3V
C207		1-126-206-11	ELECT CHIP	100MF	20%	6.3V
C211		1-163-031-11	CERAMIC CHIP	0.01MF		50V
C212		1-163-031-11	CERAMIC CHIP	0.01MF		50V
C213		1-163-031-11	CERAMIC CHIP	0.01MF		50V
C214		1-163-031-11	CERAMIC CHIP	0.01MF		50V
C215		1-163-031-11	CERAMIC CHIP	0.01MF		50V
C216		1-163-031-11	CERAMIC CHIP	0.01MF		50V
C217		1-163-031-11	CERAMIC CHIP	0.01MF		50V
C301		1-163-031-11	CERAMIC CHIP	0.01MF		50V
C302		1-163-031-11	CERAMIC CHIP	0.01MF		50V
C303		1-163-031-11	CERAMIC CHIP	0.01MF		50V
C304		1-163-031-11	CERAMIC CHIP	0.01MF		50V
C305		1-163-031-11	CERAMIC CHIP	0.01MF		50V
C306		1-163-031-11	CERAMIC CHIP	0.01MF		50V
C307		1-163-031-11	CERAMIC CHIP	0.01MF		50V
C308		1-163-031-11	CERAMIC CHIP	0.01MF		50V
			<CONNECTOR>			
CN201	*	1-564-005-11	PIN, CONNECTOR 6P			
CN202	*	1-564-009-11	PIN, CONNECTOR 10P			
			<DIODE>			
D201		8-719-404-49	DIODE MA111			
D202		8-719-404-49	DIODE MA111			
D203		8-719-404-49	DIODE MA111			
D204		8-719-404-49	DIODE MA111			
D205		8-719-404-49	DIODE MA111			
D206		8-719-404-49	DIODE MA111			
D207		8-719-404-49	DIODE MA111			
D208		8-719-404-49	DIODE MA111			
D209		8-719-404-49	DIODE MA111			
D210		8-719-404-49	DIODE MA111			
D211		8-719-404-49	DIODE MA111			
D212		8-719-404-49	DIODE MA111			
D213		8-719-404-49	DIODE MA111			
D214		8-719-404-49	DIODE MA111			
D215		8-719-404-49	DIODE MA111			
D216		8-719-404-49	DIODE MA111			
D217		8-719-404-49	DIODE MA111			
D218		8-719-404-49	DIODE MA111			
D219		8-719-404-49	DIODE MA111			
D220		8-719-404-49	DIODE MA111			

REF NO.	PART NO.	DESCRIPTION			REMARK
D221	8-719-404-49	DIODE MA111			
D222	8-719-404-49	DIODE MA111			
D223	8-719-987-45	DIODE CL-155Y/PG-CD			
D224	8-719-987-45	DIODE CL-155Y/PG-CD			
D225	8-719-987-45	DIODE CL-155Y/PG-CD			
D226	8-719-987-45	DIODE CL-155Y/PG-CD			
D231	8-719-158-19	DIODE RD6.2SB			
		<IC>			
IC201	8-752-842-86	IC CXP2003M			
IC202	8-752-842-86	IC CXP2003M			
		<TRANSISTOR>			
Q201	1-801-806-11	TRANSISTOR DTC144EKA-T146			
Q202	8-729-921-12	TRANSISTOR 2SD1834			
Q203	8-729-921-12	TRANSISTOR 2SD1834			
		<RESISTOR>			
R201	1-216-043-91	RES,CHIP	560	5%	1/10W
R202	1-216-043-91	RES,CHIP	560	5%	1/10W
R203	1-216-043-91	RES,CHIP	560	5%	1/10W
R204	1-216-043-91	RES,CHIP	560	5%	1/10W
R205	1-216-097-91	RES,CHIP	100K	5%	1/10W
R206	1-216-049-91	RES,CHIP	1K	5%	1/10W
R207	1-216-049-91	RES,CHIP	1K	5%	1/10W
R208	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R209	1-216-049-91	RES,CHIP	1K	5%	1/10W
R210	1-216-097-91	RES,CHIP	100K	5%	1/10W
R211	1-216-085-00	RES,CHIP	33K	5%	1/10W
R212	1-216-095-00	RES,CHIP	82K	5%	1/10W
R213	1-216-085-00	RES,CHIP	33K	5%	1/10W
R214	1-216-095-00	RES,CHIP	82K	5%	1/10W
R215	1-216-089-91	RES,CHIP	47K	5%	1/10W
R216	1-216-089-91	RES,CHIP	47K	5%	1/10W
R217	1-216-089-91	RES,CHIP	47K	5%	1/10W
R301	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R302	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R303	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R304	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R305	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R306	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R307	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R308	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
		<SWITCH>			
S201	1-692-037-31	SWITCH, KEY BOARD (POWER)			
S202	1-692-037-31	SWITCH, KEY BOARD (DEGAUSS)			
S203	1-692-037-31	SWITCH, KEY BOARD (1)			
S204	1-692-037-31	SWITCH, KEY BOARD (2)			
S205	1-692-037-31	SWITCH, KEY BOARD (3)			
S206	1-692-037-31	SWITCH, KEY BOARD (Del)			
S207	1-692-037-31	SWITCH, KEY BOARD (4)			
S208	1-692-037-31	SWITCH, KEY BOARD (5)			
S209	1-692-037-31	SWITCH, KEY BOARD (6)			
S210	1-692-037-31	SWITCH, KEY BOARD (0)			
S211	1-692-037-31	SWITCH, KEY BOARD (7)			
S212	1-692-037-31	SWITCH, KEY BOARD (8)			
S213	1-692-037-31	SWITCH, KEY BOARD (9)			
S214	1-692-037-31	SWITCH, KEY BOARD (Ent)			
S215	1-692-037-31	SWITCH, KEY BOARD (MANUAL CONTRAST)			
S216	1-692-037-31	SWITCH, KEY BOARD (MANUAL BRIGHT)			
S217	1-692-037-31	SWITCH, KEY BOARD (MANUAL CHROMA)			
S218	1-692-037-31	SWITCH, KEY BOARD (MANUAL PHASE)			
S219	1-692-037-31	SWITCH, KEY BOARD (MENU)			
S220	1-692-037-31	SWITCH, KEY BOARD (ENTER)			
S221	1-692-037-31	SWITCH, KEY BOARD (UP)			
S222	1-692-037-31	SWITCH, KEY BOARD (DOWN)			
S231	1-473-469-11	ENCODER, ROTARY (CONTRAST)			
S232	1-473-469-11	ENCODER, ROTARY (BRIGHT)			
S233	1-473-469-11	ENCODER, ROTARY (CHROMA)			
S234	1-473-469-11	ENCODER, ROTARY (PHASE)			
**********					
	* A-1372-134-A	MOUNTED PWB, HB (14G5,BKM-10R)			
		**********			
		<CAPACITOR>			
C101	1-126-391-11	ELECT CHIP	47MF	20%	6.3V
C102	1-126-391-11	ELECT CHIP	47MF	20%	6.3V
C111	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C112	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C113	1-163-031-11	CERAMIC CHIP	0.01MF		50V
		<CONNECTOR>			
CN101	1-506-471-11	PIN, CONNECTOR 6P			
		<DIODE>			
D101	8-719-404-49	DIODE MA111			
D102	8-719-404-49	DIODE MA111			
D103	8-719-404-49	DIODE MA111			
D104	8-719-404-49	DIODE MA111			
D105	8-719-404-49	DIODE MA111			
D106	8-719-404-49	DIODE MA111			
D107	8-719-404-49	DIODE MA111			
D108	8-719-404-49	DIODE MA111			
D109	8-719-404-49	DIODE MA111			
D110	8-719-404-49	DIODE MA111			
D111	8-719-158-19	DIODE RD6.2SB			
D121	8-719-987-45	DIODE CL-155Y/PG-CD			
D122	8-719-987-45	DIODE CL-155Y/PG-CD			
D123	8-719-987-45	DIODE CL-155Y/PG-CD			
D124	8-719-987-45	DIODE CL-155Y/PG-CD			
D125	8-719-987-45	DIODE CL-155Y/PG-CD			
D126	8-719-987-45	DIODE CL-155Y/PG-CD			
D127	8-719-987-45	DIODE CL-155Y/PG-CD			
D128	8-719-987-45	DIODE CL-155Y/PG-CD			
D129	8-719-987-45	DIODE CL-155Y/PG-CD			
D130	8-719-987-45	DIODE CL-155Y/PG-CD			
		<IC>			
IC101	8-752-842-86	IC CXP2003M			
IC102	8-752-842-86	IC CXP2003M			
		<TRANSISTOR>			
Q101	8-729-921-12	TRANSISTOR 2SD1834			
Q102	8-729-921-12	TRANSISTOR 2SD1834			

REF NO.	PART NO.	DESCRIPTION			REMARK
Q103	1-801-806-11	TRANSISTOR DTC144EKA-T146			
		<RESISTOR>			
R101	1-216-043-91	RES,CHIP	560	5%	1/10W
R102	1-216-043-91	RES,CHIP	560	5%	1/10W
R103	1-216-043-91	RES,CHIP	560	5%	1/10W
R104	1-216-043-91	RES,CHIP	560	5%	1/10W
R105	1-216-043-91	RES,CHIP	560	5%	1/10W
R106	1-216-043-91	RES,CHIP	560	5%	1/10W
R107	1-216-043-91	RES,CHIP	560	5%	1/10W
R108	1-216-043-91	RES,CHIP	560	5%	1/10W
R109	1-216-043-91	RES,CHIP	560	5%	1/10W
R110	1-216-043-91	RES,CHIP	560	5%	1/10W
R112	1-216-097-91	RES,CHIP	100K	5%	1/10W
R113	1-216-049-91	RES,CHIP	1K	5%	1/10W
R114	1-216-049-91	RES,CHIP	1K	5%	1/10W
R115	1-216-049-91	RES,CHIP	1K	5%	1/10W
R116	1-216-097-91	RES,CHIP	100K	5%	1/10W
R117	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R121	1-216-085-00	RES,CHIP	33K	5%	1/10W
R122	1-216-095-00	RES,CHIP	82K	5%	1/10W
R123	1-216-085-00	RES,CHIP	33K	5%	1/10W
R124	1-216-095-00	RES,CHIP	82K	5%	1/10W
R125	1-216-089-91	RES,CHIP	47K	5%	1/10W
R126	1-216-089-91	RES,CHIP	47K	5%	1/10W
R127	1-216-089-91	RES,CHIP	47K	5%	1/10W
		<SWITCH>			
S101	1-692-037-31	SWITCH, KEY BOARD (SHIFT)			
S102	1-692-037-31	SWITCH, KEY BOARD (▣ /16:9)			
S103	1-692-037-31	SWITCH, KEY BOARD (◐ /SYNC)			
S104	1-692-037-31	SWITCH, KEY BOARD (◓ /BLUE ONLY)			
S105	1-692-037-31	SWITCH, KEY BOARD (MONO/R)			
S106	1-692-037-31	SWITCH, KEY BOARD (APT/G)			
S107	1-692-037-31	SWITCH, KEY BOARD (COMB/B)			
S108	1-692-037-31	SWITCH, KEY BOARD (F1/F3)			
S109	1-692-037-31	SWITCH, KEY BOARD (F2/F4)			
S110	1-692-037-31	SWITCH, KEY BOARD (ADDRESS/SAFE AREA)			
**********					
	* A-1375-155-A	HC COMPLETE PWB (14G5,BKM-10R)			
		**********			
	1-540-044-11	SOCKET, IC (ISC1)			
	7-628-253-35	SCREW +PS 2X8			
	7-688-001-01	W 2, SMALL			
		<CAPACITOR>			
C1	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C2	1-163-227-11	CERAMIC CHIP	10PF	0.5PF	50V
C4	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C50	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C52	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C53	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C54	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C55	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C56	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C57	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C58	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C59	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C60	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C61	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C62	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C63	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C64	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C65	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C66	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C67	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C68	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C71	1-163-031-11	CERAMIC CHIP	0.01MF		50V
C81	1-126-206-11	ELECT CHIP	100MF	20%	6.3V
C82	1-124-635-00	ELECT	220MF	20%	6.3V
C83	1-126-206-11	ELECT CHIP	100MF	20%	6.3V
C84	1-126-206-11	ELECT CHIP	100MF	20%	6.3V
C85	1-126-206-11	ELECT CHIP	100MF	20%	6.3V
C86	1-126-206-11	ELECT CHIP	100MF	20%	6.3V
C87	1-126-206-11	ELECT CHIP	100MF	20%	6.3V
C88	1-126-206-11	ELECT CHIP	100MF	20%	6.3V
C89	1-126-206-11	ELECT CHIP	100MF	20%	6.3V
C90	1-126-206-11	ELECT CHIP	100MF	20%	6.3V
C92	1-126-206-11	ELECT CHIP	100MF	20%	6.3V
C93	1-126-206-11	ELECT CHIP	100MF	20%	6.3V
		<CONNECTOR>			
CN1	1-774-534-11	CONNECTOR, IC CARD			
CN2	1-506-474-11	PIN, CONNECTOR 9P			
CN3	* 1-564-009-11	PIN, CONNECTOR 10P			
CN4	* 1-564-005-11	PIN, CONNECTOR 6P			
CN5	1-506-471-11	PIN, CONNECTOR 6P			
		<DIODE>			
D1	8-719-158-19	DIODE RD6.2SB			
D2	8-719-158-19	DIODE RD6.2SB			
D3	8-719-158-19	DIODE RD6.2SB			
D4	8-719-158-19	DIODE RD6.2SB			
D5	8-719-158-19	DIODE RD6.2SB			
D6	8-719-158-19	DIODE RD6.2SB			
D7	8-719-158-19	DIODE RD6.2SB			
D8	8-719-158-19	DIODE RD6.2SB			
		<IC>			
IC1	8-759-467-21	IC HD6473258P10-EG2.0			
IC2	8-759-991-19	IC PST529CMT			
IC3	8-759-186-47	IC TC74VHC138F			
IC4	8-759-186-63	IC TC74VHC245F			
IC5	8-759-186-77	IC TC74VHC541F			
IC6	8-759-186-77	IC TC74VHC541F			
IC7	8-759-175-27	IC TC74VHC574F			
IC8	8-759-186-63	IC TC74VHC245F			
IC9	8-759-186-30	IC TC74VHC14F			
IC10	8-759-186-30	IC TC74VHC14F			
IC11	8-759-175-27	IC TC74VHC574F			
IC12	8-759-174-16	IC TC74VHC244F			
IC13	8-759-289-43	IC LTC490CS8			
IC14	8-759-186-26	IC TC74VHC02F			
IC16	1-810-899-11	IC MAX877CSA			
IC21	8-759-186-44	IC TC74VHC125F			

REF NO.	PART NO.	DESCRIPTION			REMARK
		<COIL>			
L1	1-412-539-11	INDUCTOR	150µH		
L2	1-412-537-31	INDUCTOR	100µH		
L3	1-412-537-31	INDUCTOR	100µH		
		<TRANSISTOR>			
Q2	1-801-806-11	TRANSISTOR DTC144EKA-T146			
Q4	8-729-122-13	TRANSISTOR 2SA1221-K			
Q6	1-801-806-11	TRANSISTOR DTC144EKA-T146			
		<RESISTOR>			
R1	1-216-073-00	RES,CHIP	10K	5%	1/10W
R2	1-216-295-91	SHORT	0		
R3	1-216-073-00	RES,CHIP	10K	5%	1/10W
R4	1-216-073-00	RES,CHIP	10K	5%	1/10W
R5	1-216-073-00	RES,CHIP	10K	5%	1/10W
R6	1-216-073-00	RES,CHIP	10K	5%	1/10W
R7	1-216-097-91	RES,CHIP	100K	5%	1/10W
R10	1-216-057-00	RES,CHIP	2.2K	5%	1/10W
R11	1-216-069-00	RES,CHIP	6.8K	5%	1/10W
R12	1-216-073-00	RES,CHIP	10K	5%	1/10W
R13	1-216-073-00	RES,CHIP	10K	5%	1/10W
R14	1-216-073-00	RES,CHIP	10K	5%	1/10W
R15	1-216-073-00	RES,CHIP	10K	5%	1/10W
R16	1-216-073-00	RES,CHIP	10K	5%	1/10W
R18	1-216-073-00	RES,CHIP	10K	5%	1/10W
R19	1-216-073-00	RES,CHIP	10K	5%	1/10W
R20	1-216-073-00	RES,CHIP	10K	5%	1/10W
R21	1-216-049-91	RES,CHIP	1K	5%	1/10W
R22	1-216-049-91	RES,CHIP	1K	5%	1/10W
R23	1-216-049-91	RES,CHIP	1K	5%	1/10W
R24	1-216-049-91	RES,CHIP	1K	5%	1/10W
R25	1-216-049-91	RES,CHIP	1K	5%	1/10W
R26	1-216-049-91	RES,CHIP	1K	5%	1/10W
R27	1-216-049-91	RES,CHIP	1K	5%	1/10W
R28	1-216-049-91	RES,CHIP	1K	5%	1/10W
R31	1-216-089-91	RES,CHIP	47K	5%	1/10W
R32	1-216-089-91	RES,CHIP	47K	5%	1/10W
R33	1-216-089-91	RES,CHIP	47K	5%	1/10W
R34	1-216-089-91	RES,CHIP	47K	5%	1/10W
R35	1-216-089-91	RES,CHIP	47K	5%	1/10W
R36	1-216-089-91	RES,CHIP	47K	5%	1/10W
R37	1-216-089-91	RES,CHIP	47K	5%	1/10W
R38	1-216-089-91	RES,CHIP	47K	5%	1/10W
R40	1-216-065-91	RES,CHIP	4.7K	5%	1/10W
R41	1-216-073-00	RES,CHIP	10K	5%	1/10W
R42	1-216-073-00	RES,CHIP	10K	5%	1/10W
R43	1-216-073-00	RES,CHIP	10K	5%	1/10W
R44	1-216-073-00	RES,CHIP	10K	5%	1/10W
R45	1-216-089-91	RES,CHIP	47K	5%	1/10W
R48	1-216-061-00	RES,CHIP	3.3K	5%	1/10W
R49	1-216-061-00	RES,CHIP	3.3K	5%	1/10W
R50	1-216-097-91	RES,CHIP	100K	5%	1/10W
R51	1-216-097-91	RES,CHIP	100K	5%	1/10W
R52	1-216-097-91	RES,CHIP	100K	5%	1/10W
R53	1-216-097-91	RES,CHIP	100K	5%	1/10W
R54	1-216-097-91	RES,CHIP	100K	5%	1/10W
R55	1-216-097-91	RES,CHIP	100K	5%	1/10W
R56	1-216-097-91	RES,CHIP	100K	5%	1/10W
R57	1-216-097-91	RES,CHIP	100K	5%	1/10W
R58	1-216-097-91	RES,CHIP	100K	5%	1/10W
R60	1-216-089-91	RES,CHIP	47K	5%	1/10W
R61	1-216-089-91	RES,CHIP	47K	5%	1/10W
R62	1-216-089-91	RES,CHIP	47K	5%	1/10W
R63	1-216-089-91	RES,CHIP	47K	5%	1/10W
R64	1-216-089-91	RES,CHIP	47K	5%	1/10W
R65	1-216-089-91	RES,CHIP	47K	5%	1/10W
R66	1-216-089-91	RES,CHIP	47K	5%	1/10W
R67	1-216-089-91	RES,CHIP	47K	5%	1/10W
R68	1-216-097-91	RES,CHIP	100K	5%	1/10W
R69	1-216-049-91	RES,CHIP	1K	5%	1/10W
R70	1-216-097-91	RES,CHIP	100K	5%	1/10W
R71	1-216-097-91	RES,CHIP	100K	5%	1/10W
R72	1-216-097-91	RES,CHIP	100K	5%	1/10W
R73	1-216-097-91	RES,CHIP	100K	5%	1/10W
R74	1-216-097-91	RES,CHIP	100K	5%	1/10W
R75	1-216-097-91	RES,CHIP	100K	5%	1/10W
R76	1-216-097-91	RES,CHIP	100K	5%	1/10W
R77	1-216-097-91	RES,CHIP	100K	5%	1/10W
R78	1-216-097-91	RES,CHIP	100K	5%	1/10W
R79	1-216-097-91	RES,CHIP	100K	5%	1/10W
R80	1-216-097-91	RES,CHIP	100K	5%	1/10W
R81	1-216-097-91	RES,CHIP	100K	5%	1/10W
R82	1-216-097-91	RES,CHIP	100K	5%	1/10W
R83	1-216-097-91	RES,CHIP	100K	5%	1/10W
R84	1-216-097-91	RES,CHIP	100K	5%	1/10W
R85	1-216-097-91	RES,CHIP	100K	5%	1/10W
R86	1-216-097-91	RES,CHIP	100K	5%	1/10W
R87	1-216-097-91	RES,CHIP	100K	5%	1/10W
R88	1-216-097-91	RES,CHIP	100K	5%	1/10W
R89	1-216-097-91	RES,CHIP	100K	5%	1/10W
R90	1-216-097-91	RES,CHIP	100K	5%	1/10W
R91	1-216-097-91	RES,CHIP	100K	5%	1/10W
R92	1-216-097-91	RES,CHIP	100K	5%	1/10W
R93	1-216-097-91	RES,CHIP	100K	5%	1/10W
R94	1-216-097-91	RES,CHIP	100K	5%	1/10W
		<CRYSTAL>			
X1	1-767-892-21	VIBRATOR, CRYSTAL (20MHz)			
**********					
	* A-1372-136-A	MOUNTED PWB, HD (14G1/20G1,BKM-10R)			
		**********			
		<CONNECTOR>			
CN101	1-565-269-11	SOCKET, CONNECTOR (D-DUB,L) 9P			
CN102	1-506-474-11	PIN, CONNECTOR 9P			
		<DIODE>			
D101	8-719-037-00	DIODE RD6.2SB2-T1			
D102	8-719-037-00	DIODE RD6.2SB2-T1			
D103	8-719-037-00	DIODE RD6.2SB2-T1			
D104	8-719-037-00	DIODE RD6.2SB2-T1			
D105	8-719-037-00	DIODE RD6.2SB2-T1			
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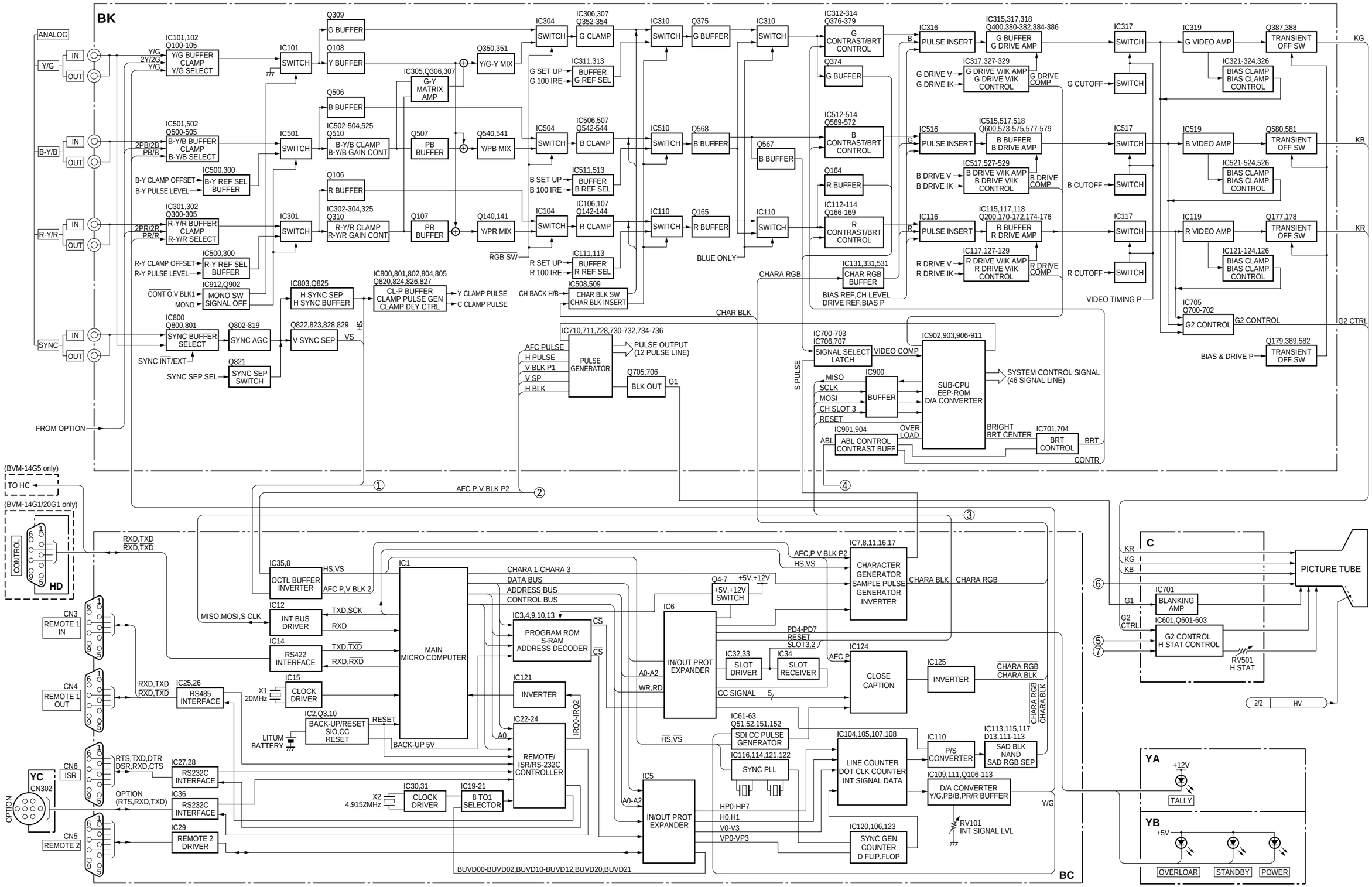
REF NO.	PART NO.	DESCRIPTION			REMARK
		P MOUNT (not supplyed)			
		*******			
		<CAPACITOR>			
C901	1-137-150-11	MYLAR	0.01MF	10%	100V
C902	1-137-150-11	MYLAR	0.01MF	10%	100V
C903	1-136-157-00	FILM	0.022MF	5%	50V
		<CONNECTOR>			
CN901	* 1-573-986-11	PIN, CONNECTOR (PC BOARD) 5P			
CN902	* 1-564-514-11	PLUG, CONNECTOR 11P			
CN903	* 1-508-766-00	PIN, CONNECTOR (5MM PITCH) 4P			
CN904	1-766-240-11	PIN, CONNECTOR (PC BOARD) 2P			
		<DIODE>			
D901	8-719-302-43	DIODE EL1Z			
		<NEON LAMP>			
NL901	1-519-526-11	LAMP, NEON			
NL902	1-519-526-11	LAMP, NEON			
		<RESISTOR>			
R901	1-215-437-00	METAL	4.7K	1%	1/4W
R902	1-215-437-00	METAL	4.7K	1%	1/4W
R903	1-215-425-00	METAL	1.5K	1%	1/4W (20G1)
R903	1-215-427-00	METAL	1.8K	1%	1/4W (14G1/14G5)
R904	1-215-437-00	METAL	4.7K	1%	1/4W
R905	1-215-437-00	METAL	4.7K	1%	1/4W
R906	1-215-425-00	METAL	1.5K	1%	1/4W (20G1)
R906	1-215-427-00	METAL	1.8K	1%	1/4W (14G1/20G1)
R907	1-249-377-11	CARBON	0.47	5%	1/4W F
R908	1-249-425-11	CARBON	4.7K	5%	1/4W
R909	1-247-887-00	CARBON	220K	5%	1/4W
		<TRANSFORMER>			
T901 ⚠	X-4035-493-1	FBT ASSY, NX-4141//J1F4 (20G1)			
T901 ⚠	X-4035-494-1	FBT ASSY, NX-4141//J1F4 (14G1/14G5)			
**********					
	* A-1390-771-A	TA MOUNT			
		**********			
		<CONNECTOR>			
CN11	1-774-525-11	SOCKET, CONNECTOR 64P			
CN12	1-774-525-11	SOCKET, CONNECTOR 64P			
CN13	1-774-525-11	SOCKET, CONNECTOR 64P			
CN14	1-774-537-11	CONNECTOR PIN (PC BOARD) 50P			
CN15	* 1-564-514-11	PLUG, CONNECTOR 11P			
CN16	1-564-511-11	PLUG, CONNECTOR 8P			
CN17	* 1-564-507-11	PLUG, CONNECTOR 4P			
CN18	* 1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P			
CN19	* 1-564-505-11	PLUG, CONNECTOR 2P			
CN20	1-564-506-11	PLUG, CONNECTOR 3P			
**********					

REF NO.	PART NO.	DESCRIPTION			REMARK
	* A-1390-772-A	TB MOUNT			
		**********			
		<CAPACITOR>			
C101	1-107-877-11	ELECT	1000MF	20%	10V
		<CONNECTOR>			
CN1	1-774-525-11	SOCKET, CONNECTOR 64P			
CN2	1-774-525-11	SOCKET, CONNECTOR 64P			
CN3	1-774-525-11	SOCKET, CONNECTOR 64P			
CN4	1-774-537-11	CONNECTOR PIN (PC BOARD) 50P			
CN5	1-774-525-11	SOCKET, CONNECTOR 64P			
CN6	* 1-564-521-11	PLUG, CONNECTOR 6P			
CN7	1-564-523-11	PLUG, CONNECTOR 8P			
CN8	1-564-524-11	PLUG, CONNECTOR 9P			
		<COIL>			
L101	1-406-661-11	INDUCTOR	0µH		
**********					
	* A-1373-641-A	YA MOUNT			
		**********			
		<CONNECTOR>			
CN101	1-564-517-11	PLUG, CONNECTOR 2P			
		<DIODE>			
D101	8-719-061-96	DIODE SLR-325DCT31			
D102	8-719-061-96	DIODE SLR-325DCT31			
D103	8-719-061-96	DIODE SLR-325DCT31			
D104	8-719-061-96	DIODE SLR-325DCT31			
D105	8-719-061-96	DIODE SLR-325DCT31			
		<RESISTOR>			
R101	1-216-061-00	RES,CHIP	3.3K	5%	1/10W
R102	1-216-061-00	RES,CHIP	3.3K	5%	1/10W
R103	1-216-061-00	RES,CHIP	3.3K	5%	1/10W
R104	1-216-061-00	RES,CHIP	3.3K	5%	1/10W
R105	1-216-061-00	RES,CHIP	3.3K	5%	1/10W
R106	1-216-061-00	RES,CHIP	3.3K	5%	1/10W
R107	1-216-061-00	RES,CHIP	3.3K	5%	1/10W
R108	1-216-061-00	RES,CHIP	3.3K	5%	1/10W
R109	1-216-061-00	RES,CHIP	3.3K	5%	1/10W
R110	1-216-061-00	RES,CHIP	3.3K	5%	1/10W
**********					
	* A-1373-638-A	YB MOUNT (14G1)			
		**********			
	* A-1373-642-A	YB MOUNT (14G5/20G1)			
		**********			
		<DIODE>			
D201	8-719-061-96	DIODE SLR-325DCT31			
D202	8-719-053-43	DIODE SLR-325VCT31			
D203	8-719-060-27	DIODE SLR-325MCT31			
**********					

REF NO.		PART NO.	DESCRIPTION	REMARK
	*	A-1373-636-A	YC MOUNT (14G1)	
			**********	
	*	A-1373-643-A	YC MOUNT (14G5/20G1)	
			**********	
			<CONNECTOR>	
CN301		1-506-487-11	PIN, CONNECTOR 8P	
CN302		1-774-533-11	SOCKET, SMALL TYPE DIN (8P)	
			<CHIP CONDUCTOR>	
JR301		1-216-295-91	SHORT 0	
JR302		1-216-295-91	SHORT 0	
JR303		1-216-295-91	SHORT 0	
JR304		1-216-295-91	SHORT 0	
**********				
			MISCELLANEOUS	
			**********	
		1-452-032-00	MAGNET,DISC:10MMΦ	
		1-452-094-00	MAGNET, ROTA TABLE DISK:15MMΦ	
		1-500-249-11	BEAD, FERRITE (CASE)(14G1/14G5)	
		1-500-278-11	FILTER, CLAMP (FERRITE CORE)(20G1)	
		1-543-653-11	CORE ASSY, BEAD(DIVISION TYPE)(20G1)	
		4-051-735-22	PIECE A(75), CONV. CORRECT	
		4-051-736-21	PIECE A(90), CONV. CORRECT (20G1)	
	⚠	1-411-657-11	COIL, LANDING CORRECTION (20G1)	
	⚠	1-411-658-21	COIL, LANDING CORRECTION (14G1/14G5)	
	⚠	1-411-659-21	COIL, DEMAGNETIC (20G1)	
	⚠	1-411-660-21	COIL, DEMAGNETIC (14G1/14G5)	
	⚠	1-452-436-41	NECK ASSY, CRT (NA292)(15G1/14G5)	
	⚠	8-451-470-13	DY Y20MPD-M (20G1)	
	⚠	8-451-473-11	DY Y14MPDT (14G1/14G5)	
	⚠	8-453-003-11	NA3012(M) (20G1)	
V901	⚠	8-736-378-05	PICTURE TUBE (20MT1)(20G1E)	
V901	⚠	8-736-380-05	PICTURE TUBE (20MT3)(20G1U)	
V901	⚠	8-736-388-05	PICTURE TUBE (20MT1(S))(20G1A)	
V901	⚠	8-738-333-05	PICTURE TUBE (14MT1)(14G1E/14G5E/14G1A/14G5A)	
V901	⚠	8-738-335-05	PICTURE TUBE (14MT3)(14G1U/14G5U)	
**********				
			ACCESSORY & PACKING MATERIAL	
			**********	
		3-170-078-01	HOLDER (B), PLUG	
		3-701-623-01	BAG, POLYETHYLENE	
		3-862-434-11	MANUAL, OPERATION (Japanese/English)	
		4-051-484-01	LABEL, TALLY (20G1)	
		4-051-743-01	PLATE, TALLY (14G1/14G5)	
		4-396-077-01	JOINT (20G1)	
	⚠	1-534-827-14	CORD POWER (14G1U/14G5U/20G1U)	
	⚠	1-590-151-11	CORD SET, POWER 10A/250V (14G1A/14G1E/14G5A/14G5E/20G1A/20G1E)	
	*	4-051-298-01	CUSHION (UPPER) (ASSY)(20G1)	
	*	4-051-299-01	CUSHION (LOWER) (ASSY)(20G1)	
	*	4-051-321-02	INDIVIDUAL CARTON (20G1)	
	*	4-051-322-01	TRAY (20G1)	
	*	4-051-574-01	CUSHION (UPPER)(ASSY)(14G1)	
	*	4-051-575-01	CUSHION (LOWER)(ASSY)(14G1)	
	*	4-051-580-01	CUSHION (UPPER)(ASSY)(14G5)	
	*	4-051-581-01	CUSHION (LOWER)(ASSY)(14G5)	
	*	4-051-705-01	INDIVIDUAL CARTON (14G1)	
	*	4-051-708-03	INDIVIDUAL CARTON (14G5)	
	*	4-058-814-01	HOLDER (20G1)	
	*	4-058-815-01	HOLDER (14G1)	
	*	4-058-816-01	HOLDER (14G5)	
	*	4-377-015-01	BAG, PROTECTION (14G1)	
	*	4-381-155-01	BAG, PROTECTION (20G1)	
	*	4-381-155-11	BAG, PROTECTION (14G5)	

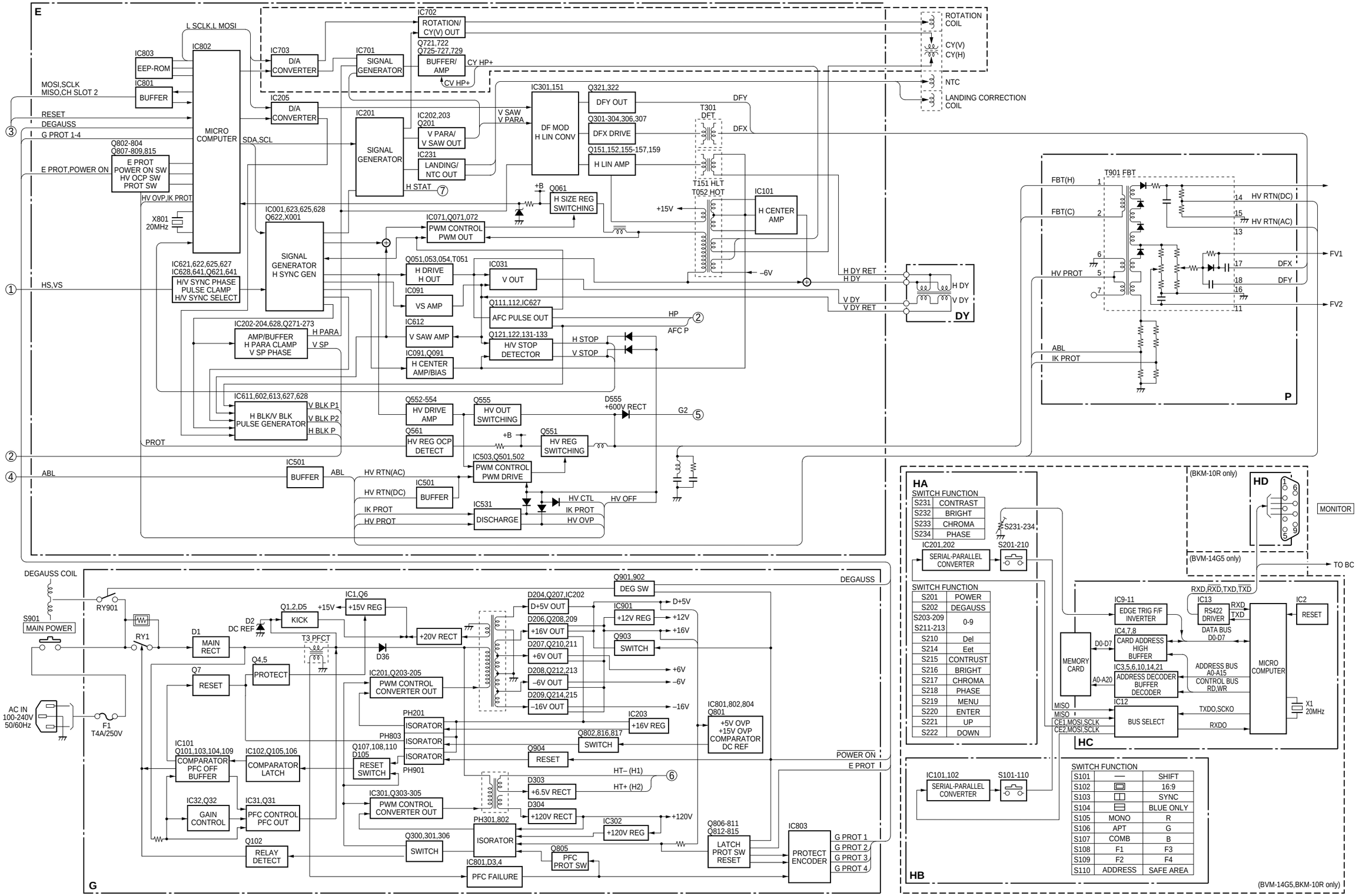
SECTION 10
BLOCK DIAGRAM

Block	Function	Page
Overall (1/2)	—	10-2
Overall (2/2)	—	10-3
BK (1/4)	Micro Computer, D/A Converter, Pulse Generator	10-4
BK (2/4)	Signal Input Select, Signal Processing	10-5
BK (3/4)	Pulse Insert, Signal Process	10-6
BK (4/4)	RGB Drive Out, RGB Drive IK/V Control	10-7
BC (1/2)	Main CPU, In/Out Expander, Remote Controller	10-8
BC (2/2)	In/Out Expander, SYNC Generator	10-9
E (1/2)	Micro Computer, H/V Signal Generator, Deflection Drive	10-10
E (2/2)	PWM Control, DF Control	10-11
G	Main Rect, ±6V REG, ±15V REG, +B REG, D5V REG	10-12
HA, HB, HC,HD	Function Select, System Control, Relay	10-13



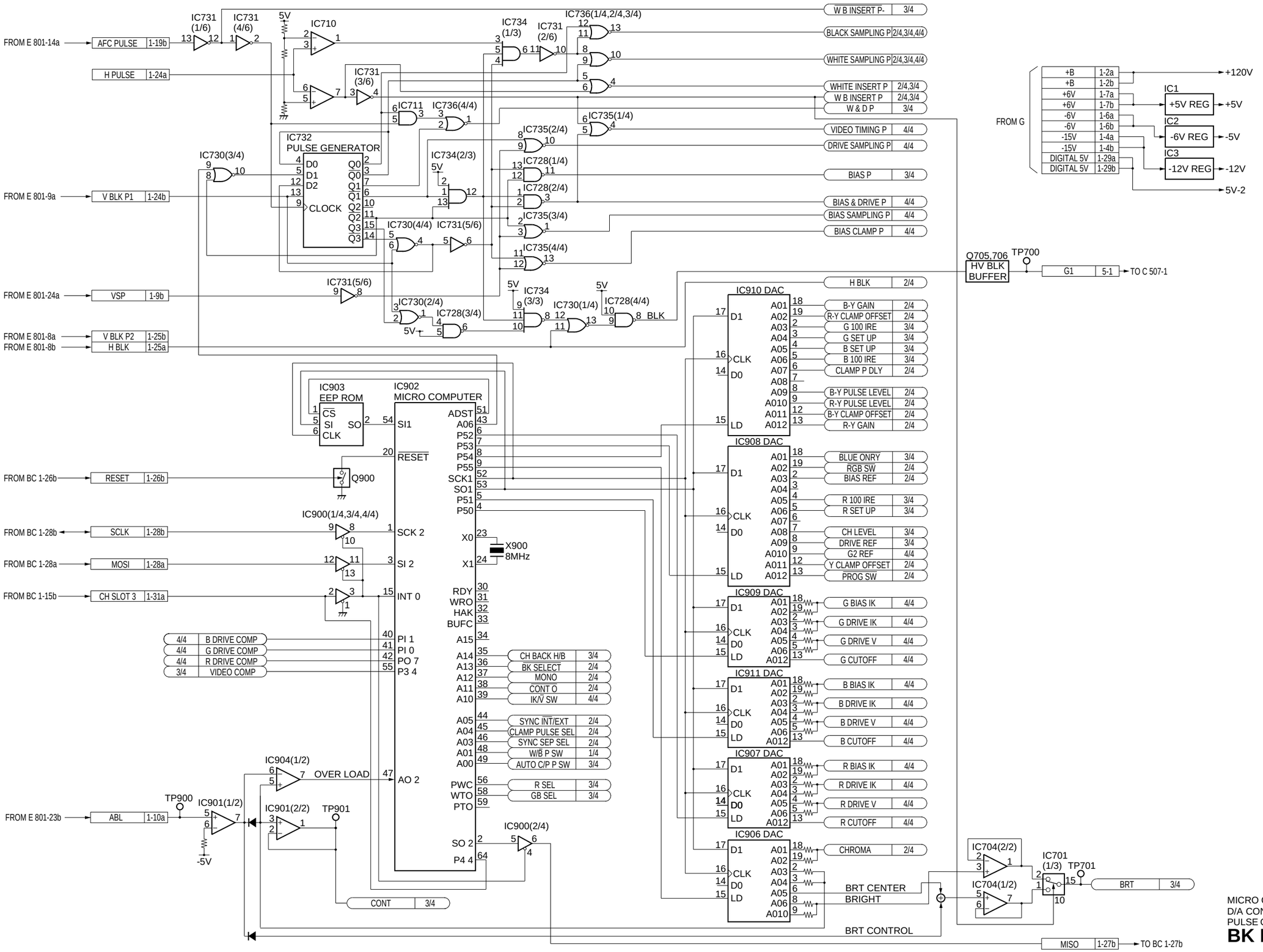
BK, HD, YC, BC, C, YA, YB BOARDS

OVERALL BLOCK (1/2)



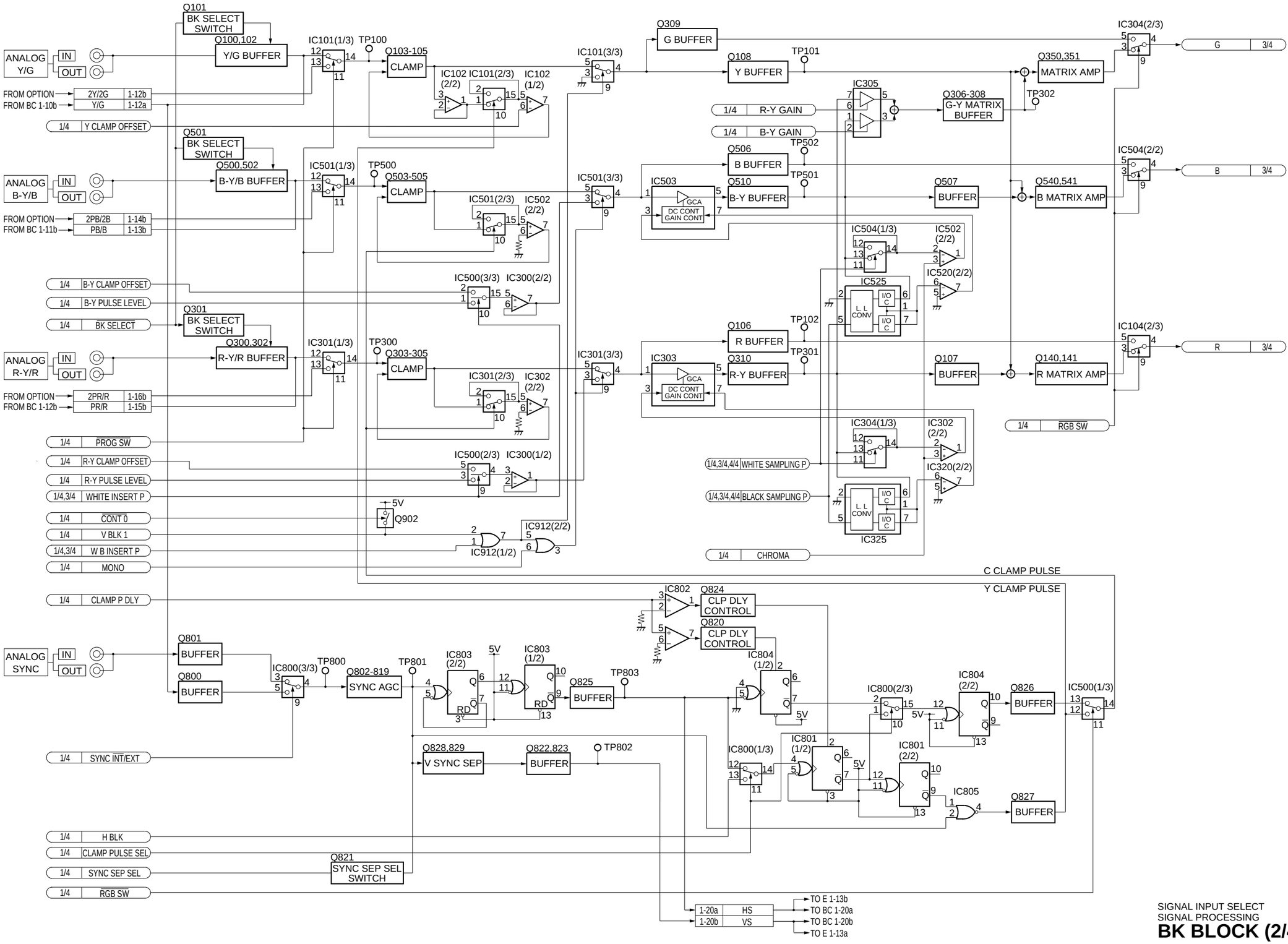
E, G, DY, P, HA, HB, HC, HD BOARDS

OVERALL BLOCK (2/2)



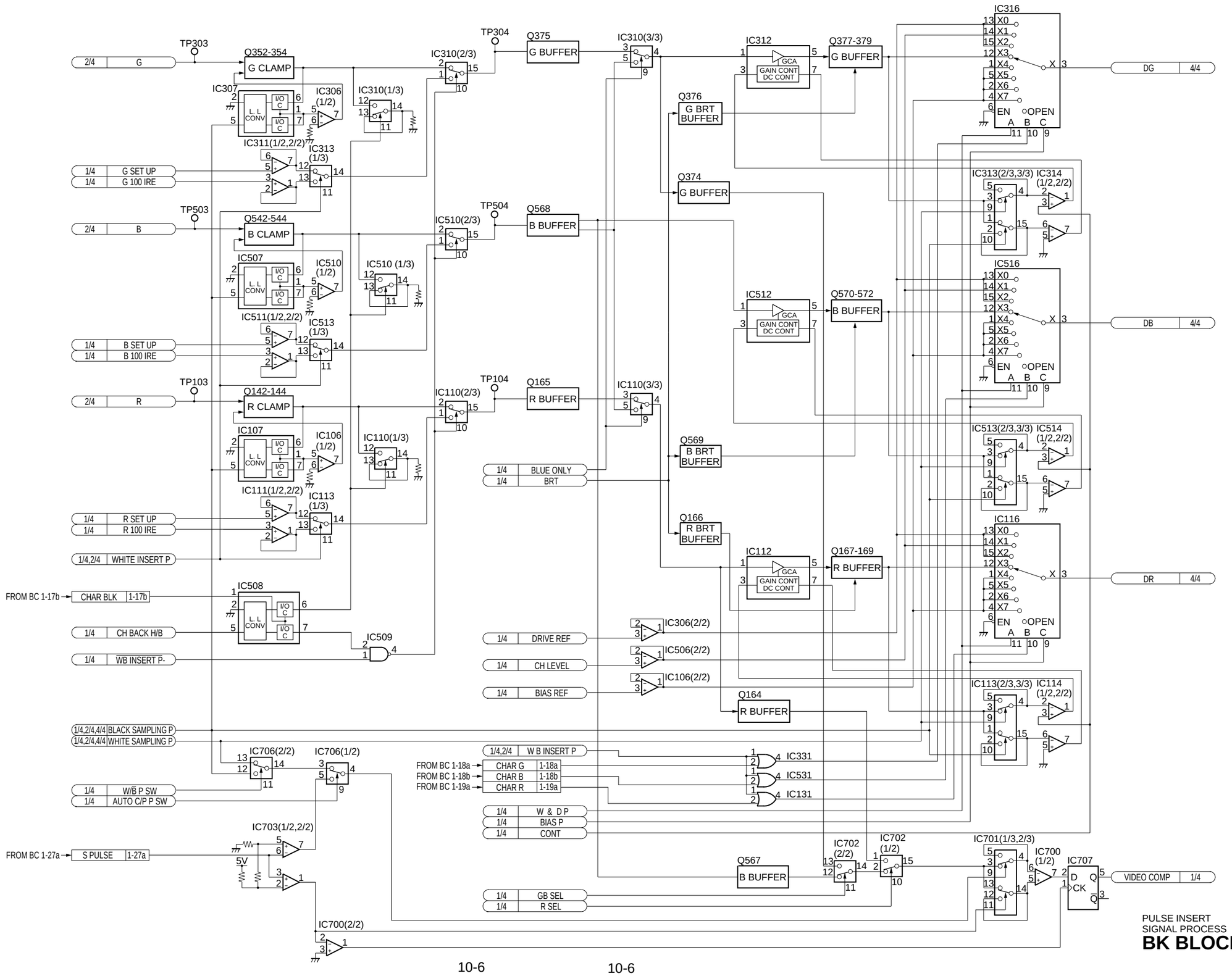
MICRO COMPUTER
D/A CONVERTER
PULSE GENERATOR

BK BLOCK (1/4)



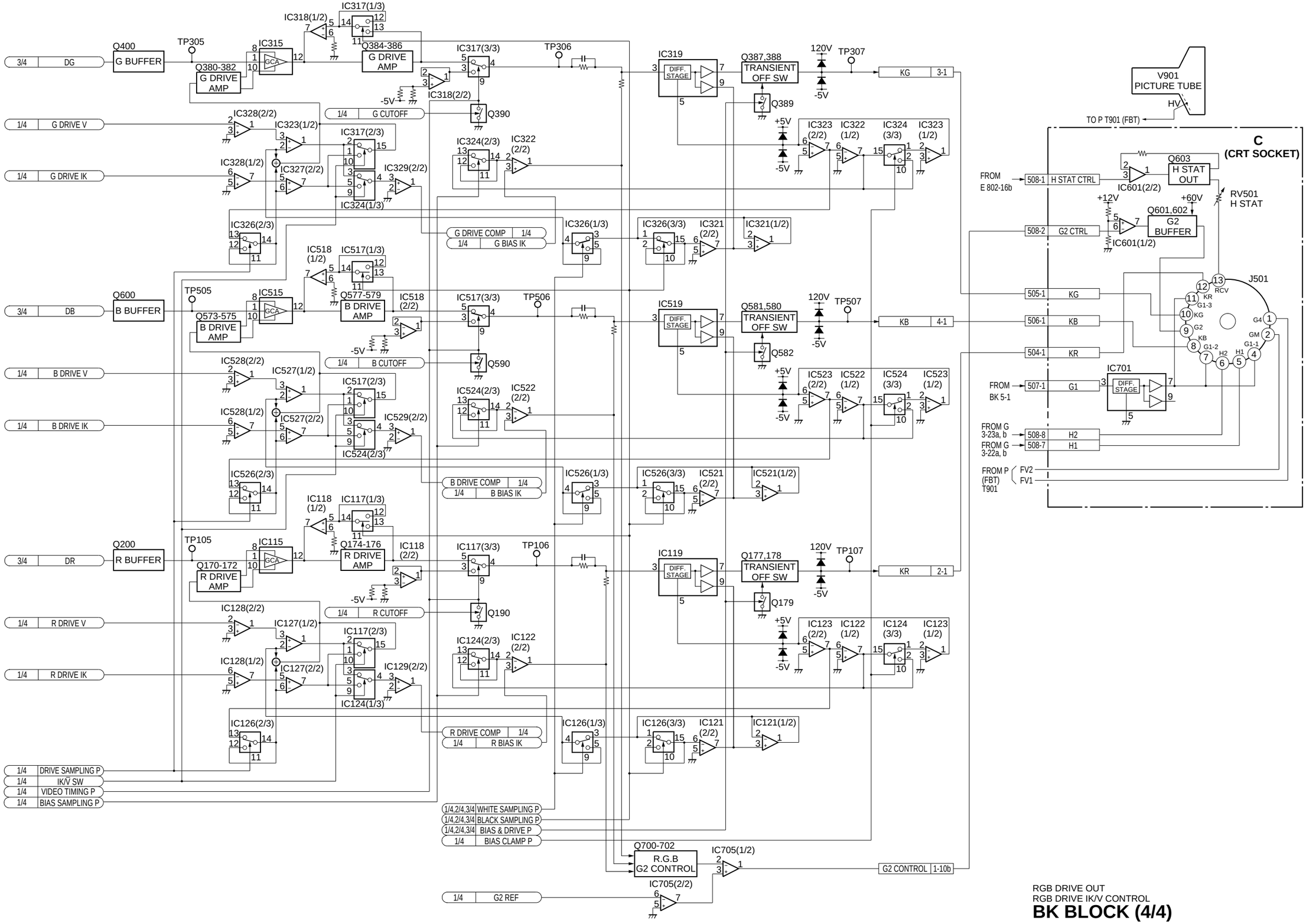
SIGNAL INPUT SELECT
SIGNAL PROCESSING

BK BLOCK (2/4)



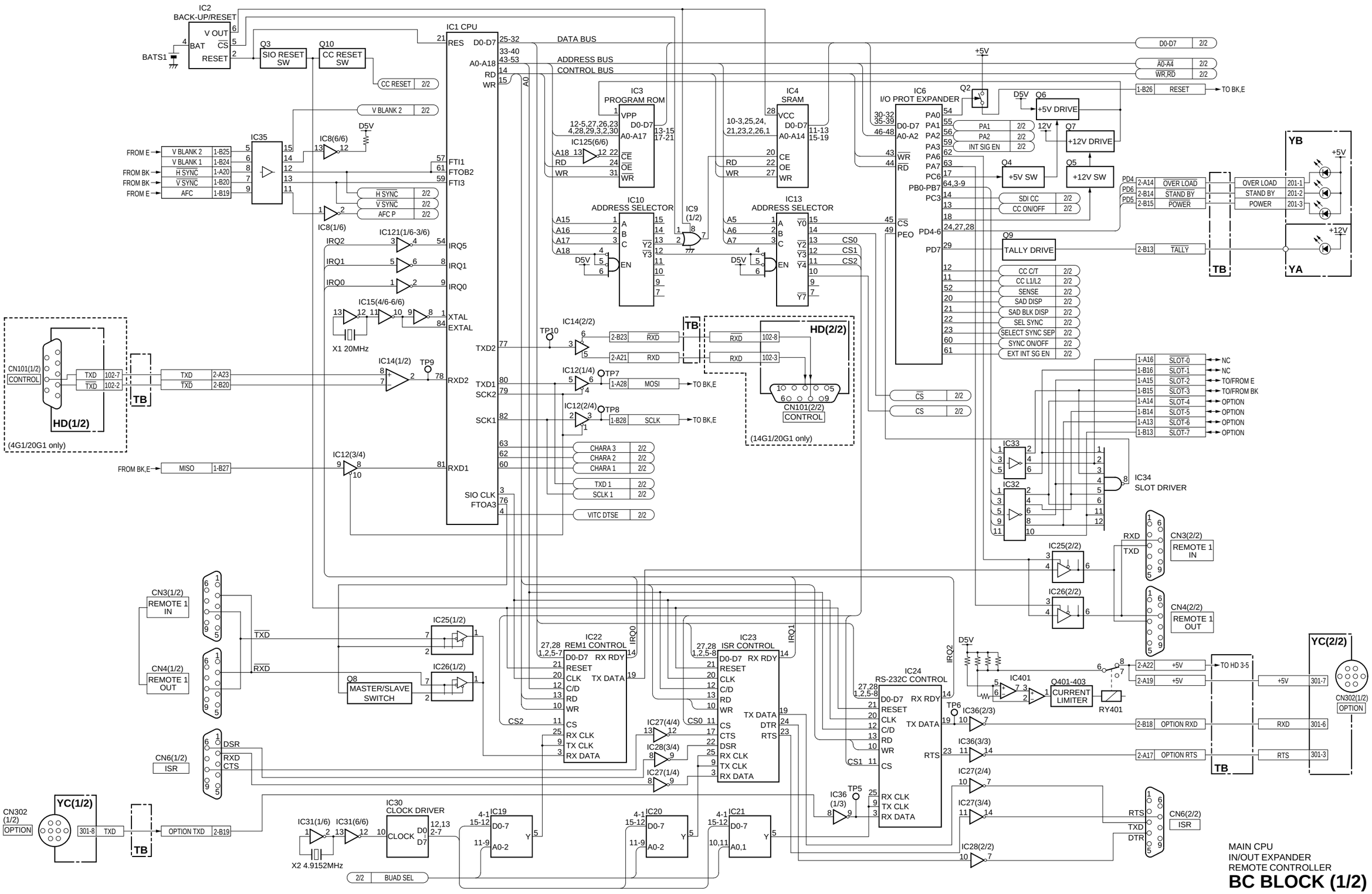
PULSE INSERT
SIGNAL PROCESS

BK BLOCK (3/4)



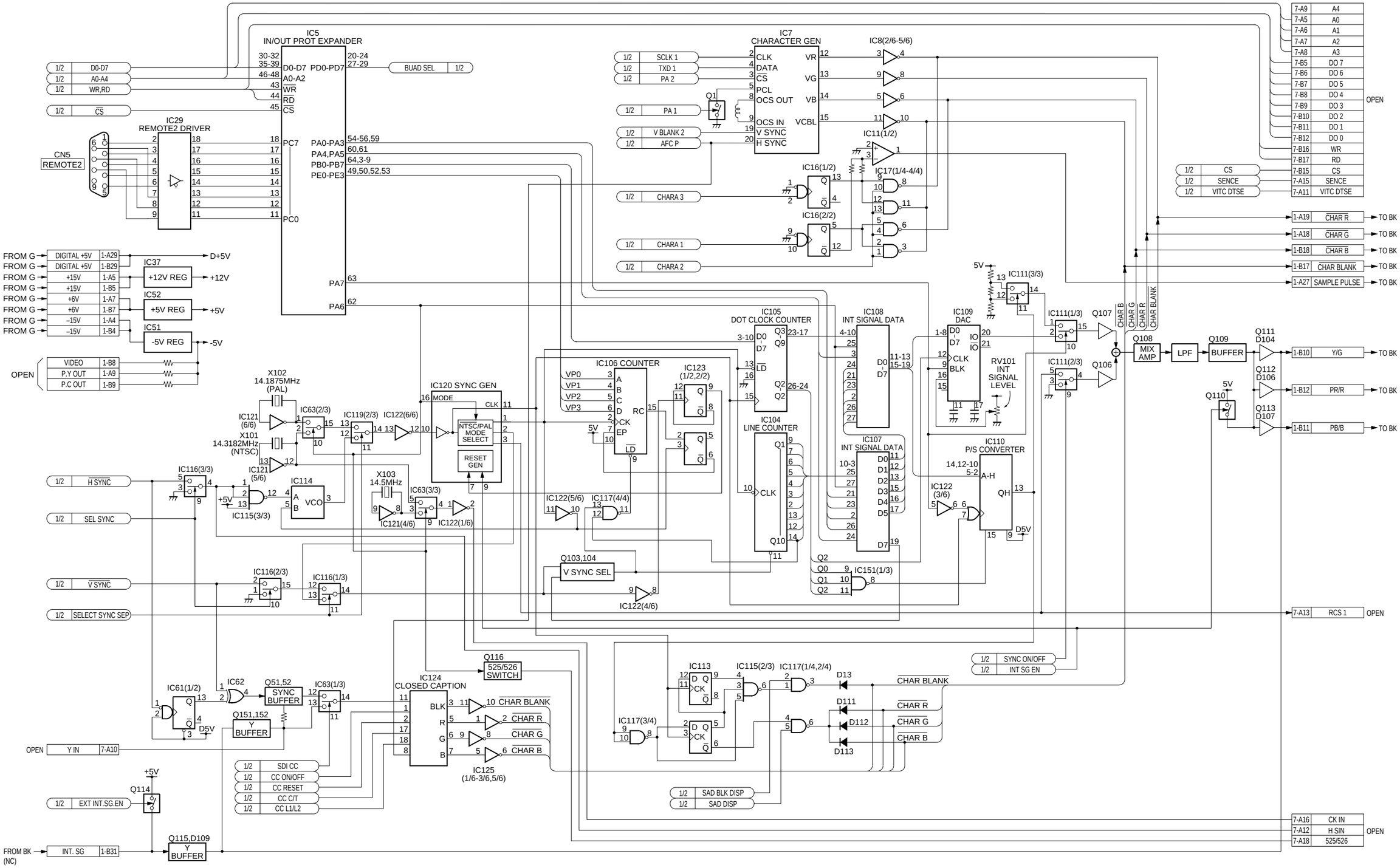
RGB DRIVE OUT
RGB DRIVE IK/V CONTROL

BK BLOCK (4/4)



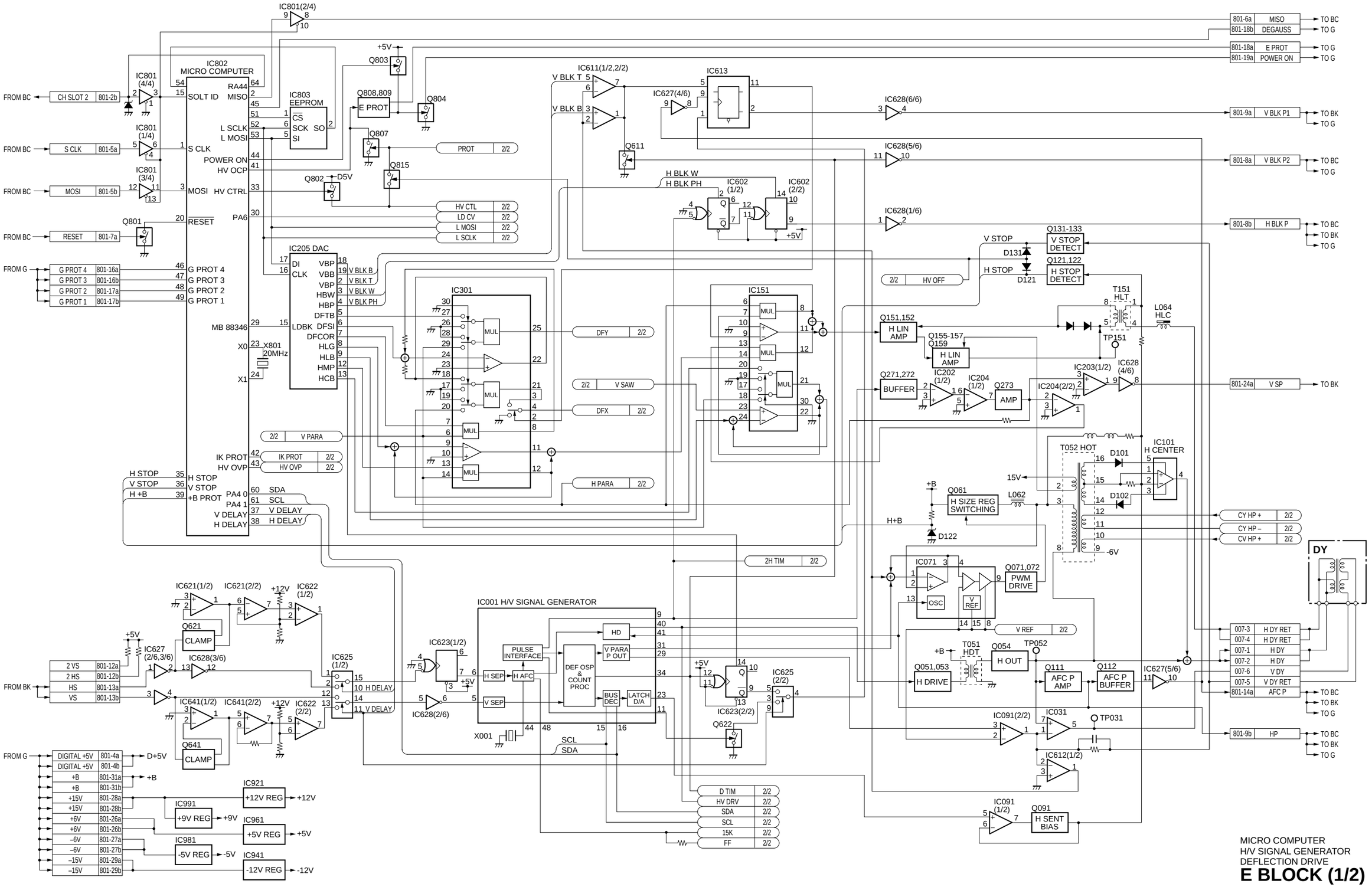
MAIN CPU
IN/OUT EXPANDER
REMOTE CONTROLLER

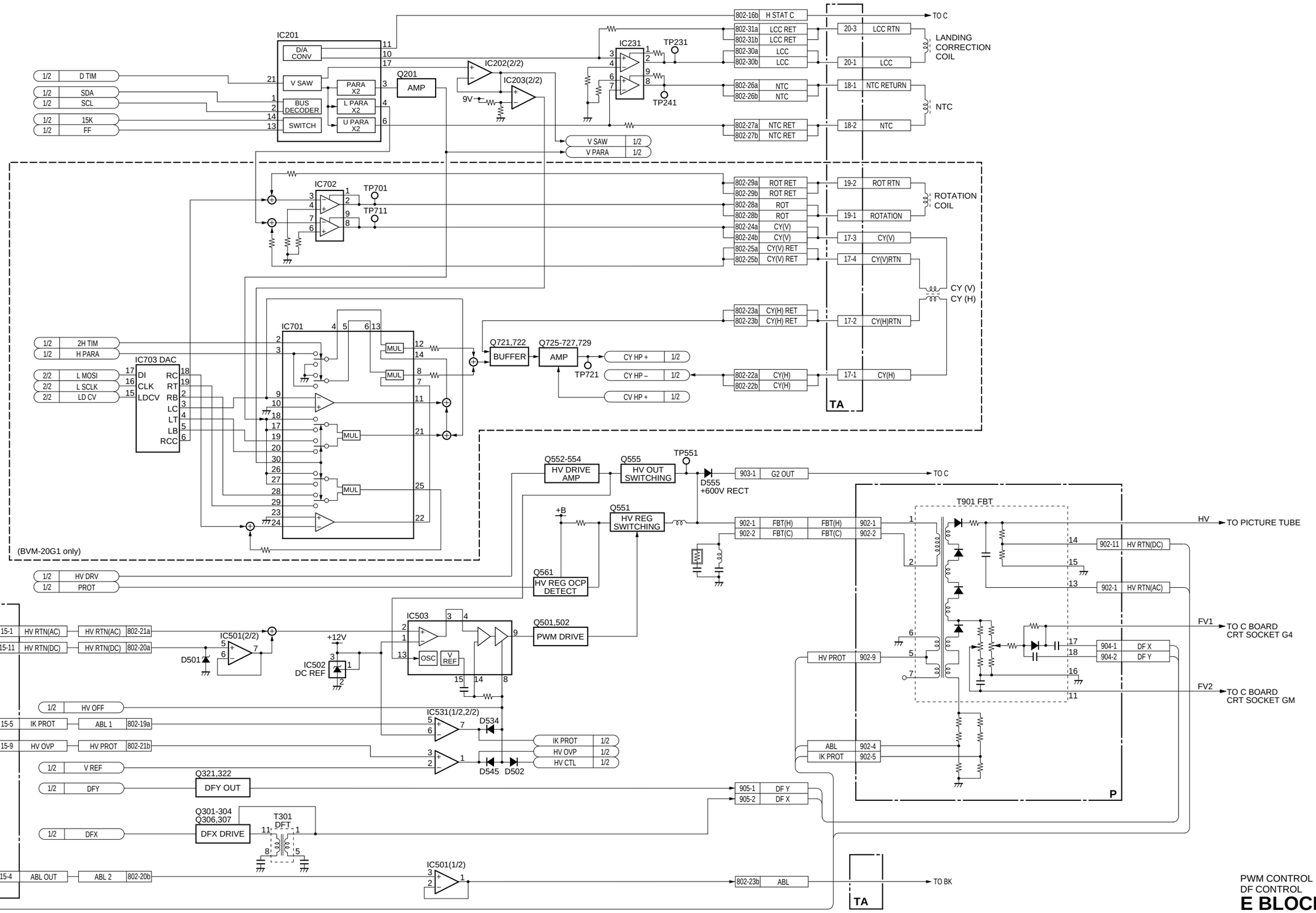
BC BLOCK (1/2)



IN/OUT EXPANDER
SYNC GNERATOR

BC BLOCK (2/2)

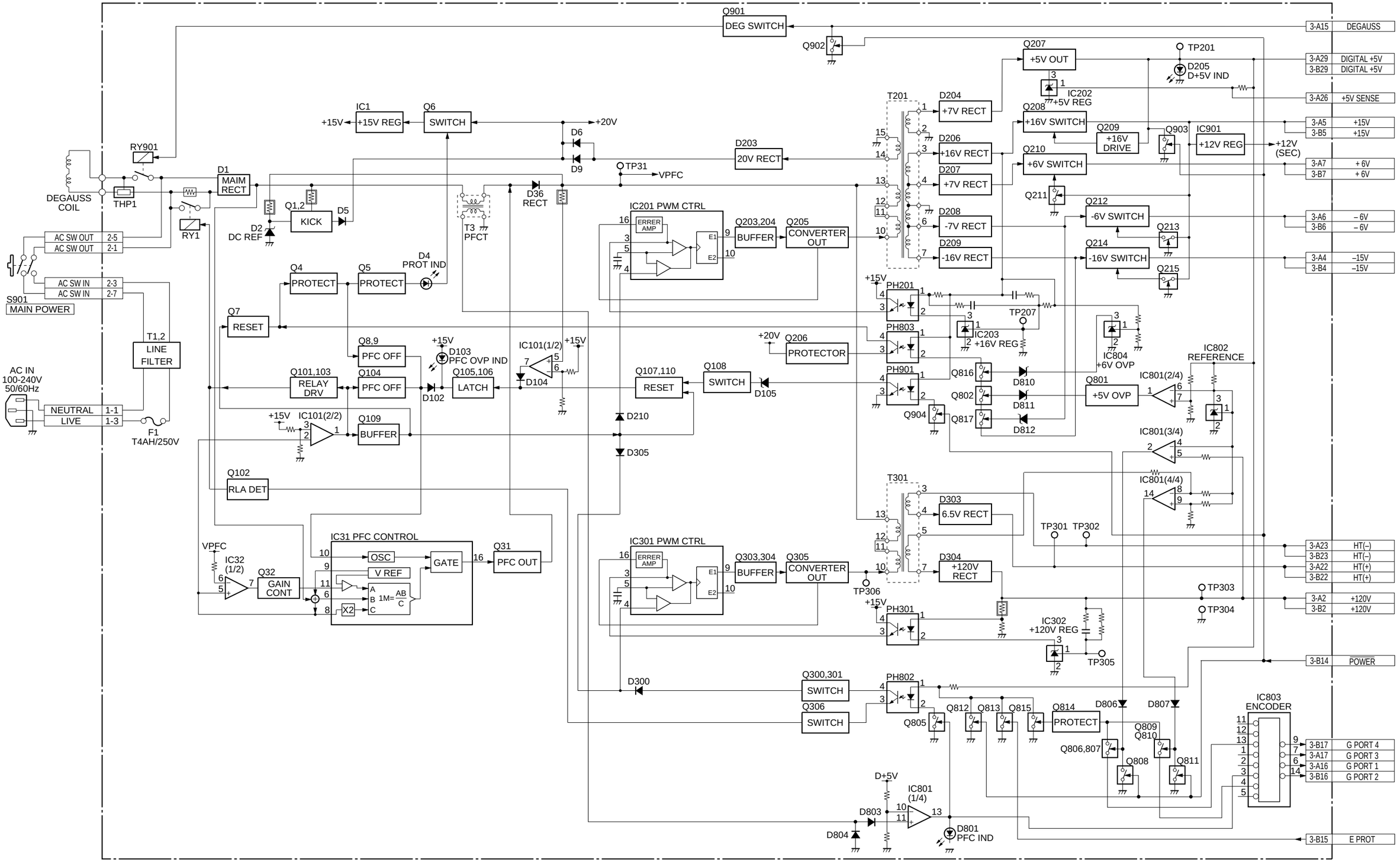

IC802 MICRO COMPUTER
IC801(2/4)
IC801 (4/4)
IC801 (1/4)
IC801 (3/4)
IC803 EEPROM
Q803
Q804
Q808,809
E PROT
Q807
Q815
Q802
D5V
Q801
IC205 DAC
MB 88346
X801 20MHz
IC301
IC151
IC611(1/2,2/2)
IC627(4/6)
IC613
Q611
IC628(6/6)
IC628(5/6)
IC628(1/6)
IC602 (1/2)
IC602 (2/2)
H BLK W
H BLK PH
V BLK T
V BLK B
V STOP
H STOP
D131
D121
Q131-133
V STOP DETECT
Q121,122
H STOP DETECT
HV OFF
T151 HLT
L064 HLC
TP151
Q151,152
H LIN AMP
Q155-157 Q159
H LIN AMP
Q271,272
BUFFER
IC202 (1/2)
IC204 (1/2)
Q273
AMP
IC203(1/2)
IC204(2/2)
IC628 (4/6)
IC101 H CENTER
T052 HOT
D101
D102
D122
Q061
H SIZE REG SWITCHING
L062
15V
-6V
H+B
IC071
OSC
V REF
Q071,072
PWM DRIVE
T051 HDT
Q054
H OUT
TP052
Q051,053
H DRIVE
Q111
AFC P AMP
Q112
AFC P BUFFER
IC627(5/6)
IC091(2/2)
IC031
TP031
IC612(1/2)
IC091 (1/2)
Q091
H SENT BIAS
DY
IC001 H/V SIGNAL GENERATOR
PULSE INTERFACE
DEF OSP & COUNT PROC
HD
V PARA P OUT
H SEP
H AFC
V SEP
BUS DEC
LATCH D/A
X001
SCL
SDA
IC623(1/2)
IC623(2/2)
IC625 (1/2)
IC625 (2/2)
IC628(2/6)
IC621(1/2)
IC621(2/2)
IC622 (1/2)
IC622 (2/2)
IC641(1/2)
IC641(2/2)
Q621
Q641
CLAMP
IC627 (2/6,3/6)
IC628(3/6)
IC921 +12V REG
IC991 +9V REG
IC961 +5V REG
IC981 -5V REG
IC941 -12V REG
FROM BC
FROM G
FROM BK
TO BC
TO G
TO BK
MICRO COMPUTER
H/V SIGNAL GENERATOR
DEFLECTION DRIVE
E BLOCK (1/2)



10-11 10-11

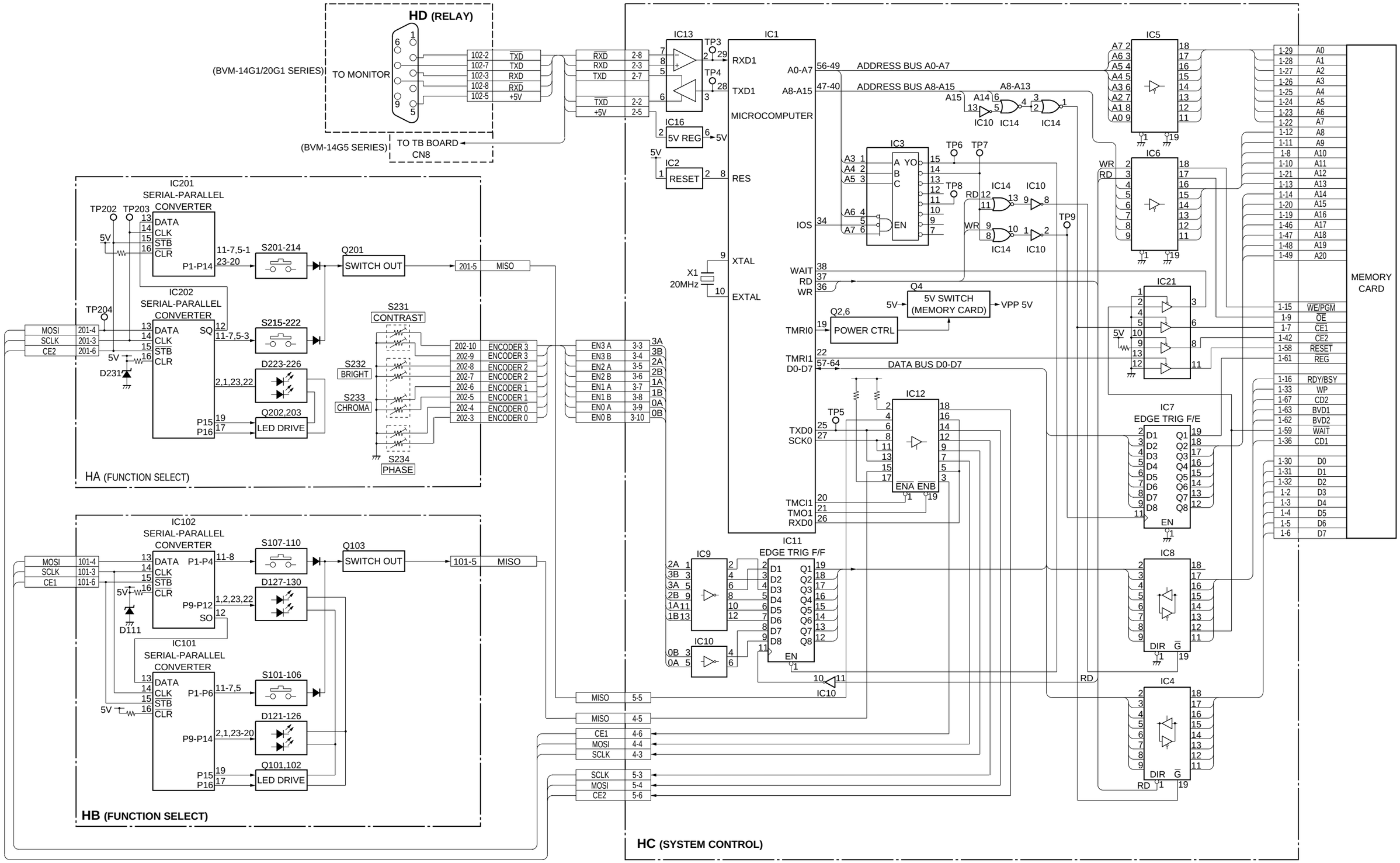
A B C D E F G H

1 2 3 4 5



MAIN RECT
±6V REG, ±15V REG, +B REG, D5V REG

G BLOCK



FUNCTION SELECT
SYSTEM CONTROL, RELAY

HA, HB, HC, HD BLOCK

SECTION 11
DIAGRAMS

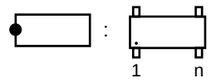
11-1. PRINTED WIRING BOARDS

Board	Function	Page
BK	R.G.B In Selector, R.G.B Gain Control, Y/G. B–Y/B. R–Y/R Signal Processing, R.G.B Drive Out, Contrast/Bright/G2 Control, Pulse Generator, R.G.B Drive IK/V Control, System Control, D/A Converter, Y/C Clamp Pulse Gen.	11-2
BC	Micro Computer, Program ROM, S/Video RAM, Character Gen., Address Selector, Parallel In/Out, Serial Controller, RS485/RS232C Interface, Signal/Character Generator, D/A Converter, Closed Caption Display, Current Limitter, Slot Receiver	11-4
E	System Control, EEP ROM, H BLK/V BLK Pulse Gen., H/V Sync Gen., PWM Control, HV Reg./HV Out Switching, Dynamic Focus, ROT. NTC. LCC. CY Out, D/A Converter	11-6
G	PFC Control, Main Rect, Converter Out, PWM Control, D+5V, ±6V, ±15V, +120V, HT Rect	11-8
C	R.G.B Out, BLK Out, H.STAT Out	11-10
HD	Relay (BVM-14G1/20G1)	11-10
P	FBT	11-10
YA	Tally	11-10
YB	Indicator	11-10
YC	Relay	11-10
HA	Function Control (BVM-14G5, BKM-10R)	11-11
HB	Function Control (BVM-14G5, BKM-10R)	11-11
HC	CPU, Memory Card Driver, RS422 Driver, Card Address Decoder (BVM-14G5, BKM-10R)	11-12
TA	Mother	11-13
TB	Mother	11-14

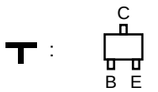
● For Printed Wiring Boards

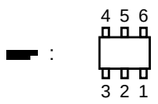
▒ : Pattern from the side which enables seeing.

• Chip IC

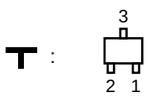


• Chip transistor





• Chip diode



11-1

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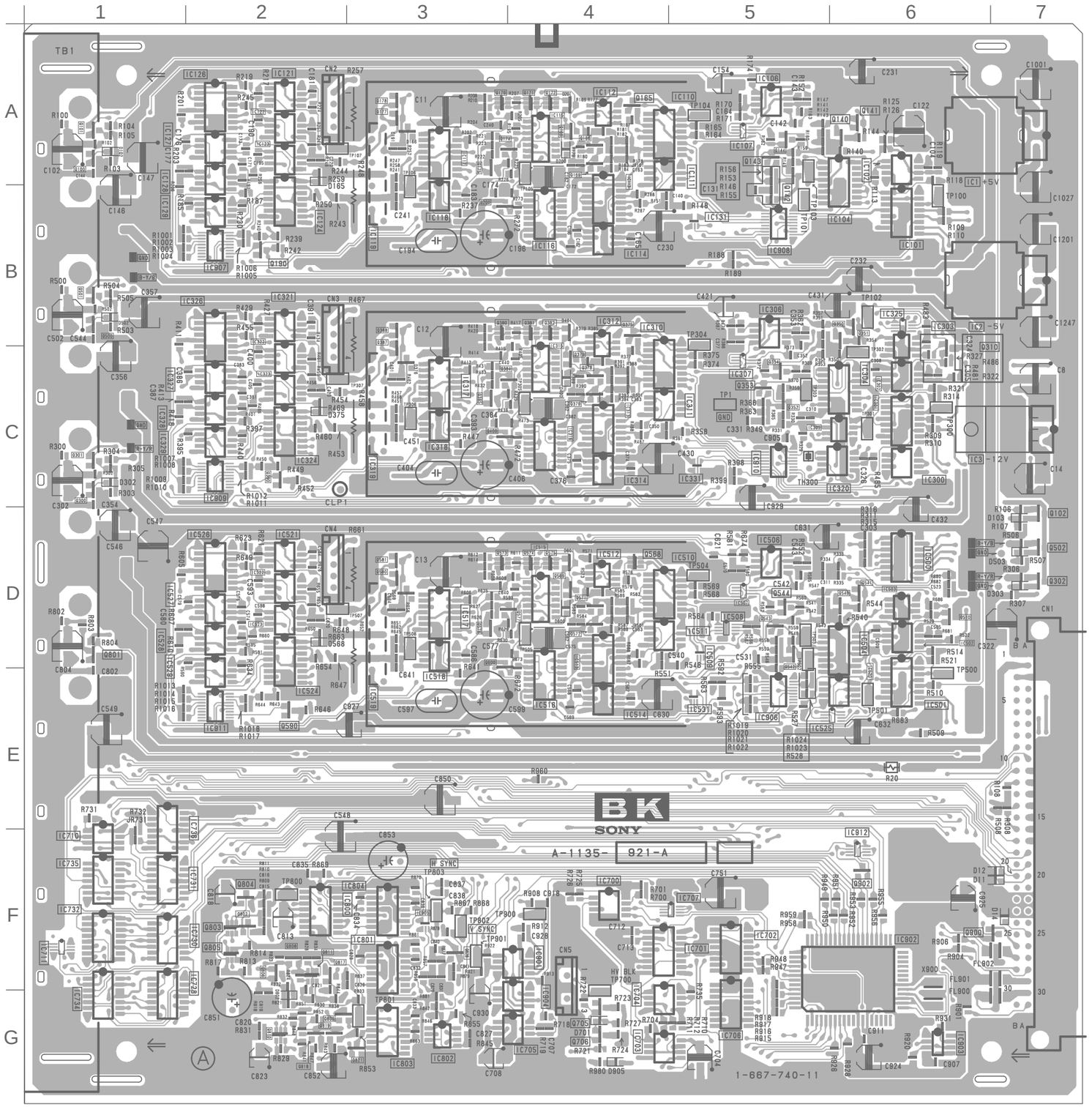
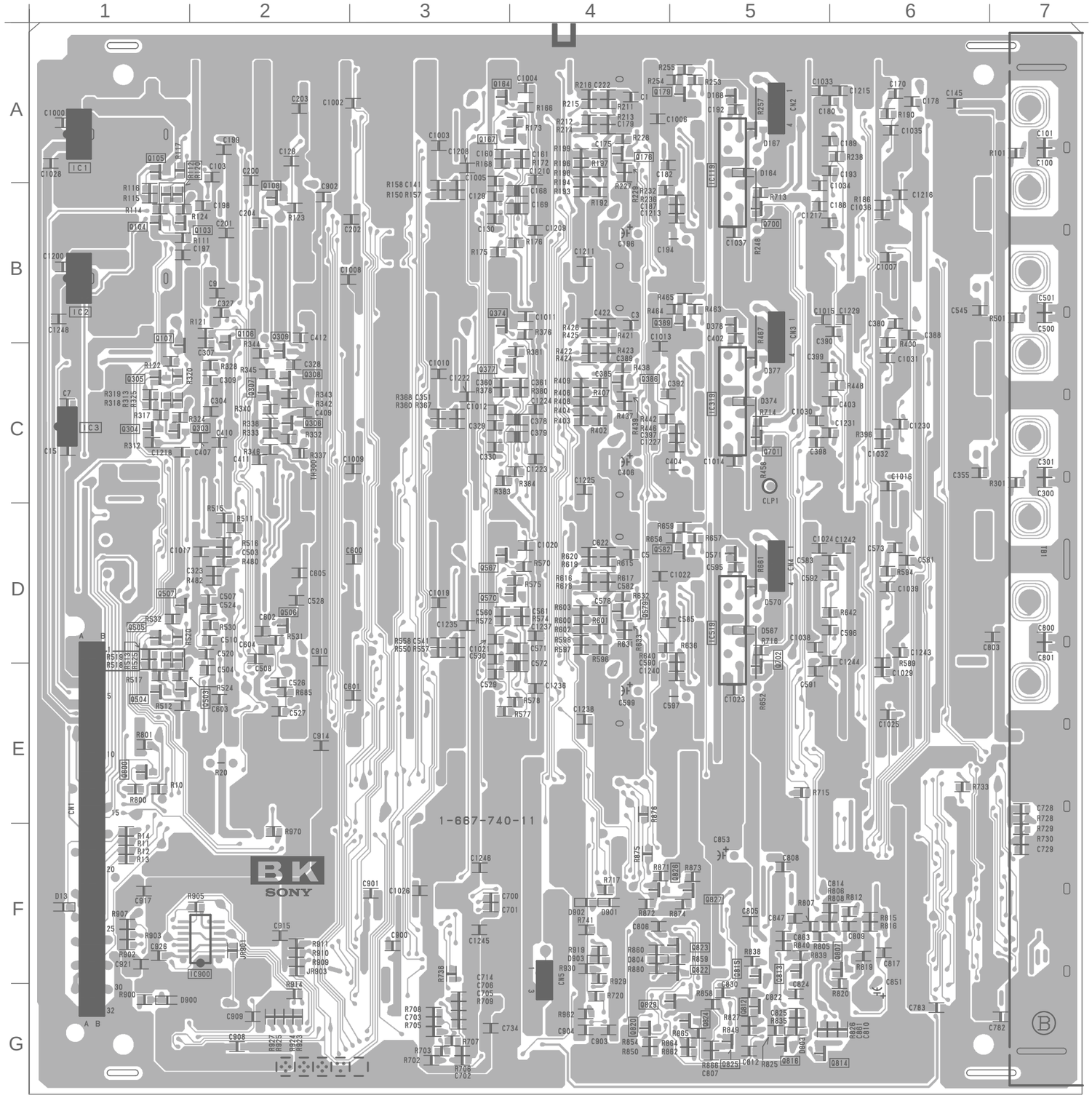
BK
--
1-667-740-11

D11	F-7	IC325	B-6	Q169	A-4	Q813	*F-5
D12	F-7	IC326	B-2	Q170	A-3	Q814	*G-5
D13	*F-1	IC327	C-2	Q171	A-4	Q815	*F-5
D14	F-7	IC328	C-2	Q172	A-4	Q816	*G-5
D102	A-1	IC329	C-2	Q174	A-4	Q817	F-2
D103	D-7	IC331	C-5	Q175	A-3	Q818	G-3
D164	*A-5	IC500	D-6	Q176	*A-4	Q819	G-3
D165	A-2	IC501	E-6	Q177	A-3	Q820	*G-4
D166	A-3	IC502	D-6	Q178	A-3	Q821	G-3
D167	*A-5	IC503	D-6	Q190	B-2	Q822	*F-5
D168	*A-5	IC504	D-6	Q200	B-4	Q823	*F-5
D200	A-4	IC506	D-5	Q300	C-1	Q824	*G-5
D201	*A-4	IC507	D-5	Q301	C-1	Q825	*G-5
D302	C-1	IC508	D-5	Q302	D-7	Q826	*F-4
D303	D-7	IC509	D-5	Q303	*C-1	Q827	*F-5
D374	*C-5	IC510	D-4	Q304	*C-1	Q828	F-3
D375	C-2	IC511	D-4	Q305	*C-1	Q829	*G-5
D376	C-3	IC512	D-4	Q306	*C-2	Q900	F-7
D377	*C-5	IC513	D-4	Q307	*C-2	Q902	F-6
D378	*B-5	IC514	E-4	Q308	*C-2		
D400	C-4	IC515	D-4	Q309	*C-2	TP1	C-5
D401	B-4	IC516	E-4	Q310	C-6	TP100	B-6
D502	B-1	IC517	D-3	Q350	B-6	TP101	B-5
D503	D-7	IC518	D-3	Q351	B-6	TP102	B-6
D567	*D-5	IC519	D-3	Q352	C-5	TP103	A-5
D568	D-2	IC520	E-6	Q353	C-5	TP104	A-5
D569	D-3	IC521	D-2	Q354	C-5	TP105	A-4
D570	*D-5	IC522	D-2	Q374	*B-3	TP106	B-3
D571	*D-5	IC523	D-2	Q375	B-4	TP107	A-2
D600	D-4	IC524	D-2	Q376	C-4	TP300	C-6
D601	D-4	IC525	E-6	Q377	*C-4	TP301	C-6
D701	G-4	IC526	D-2	Q378	C-4	TP302	C-6
D802	G-2	IC527	D-2	Q379	C-4	TP303	C-5
D803	*G-5	IC528	D-2	Q380	B-3	TP304	B-5
D804	*F-4	IC529	D-2	Q381	B-4	TP305	C-4
D900	*G-1	IC531	E-5	Q382	B-4	TP306	C-3
D901	*F-4	IC700	F-4	Q384	C-4	TP307	C-2
D902	*F-4	IC701	F-4	Q385	C-3	TP500	E-6
D903	*F-4	IC702	F-5	Q386	*C-4	TP501	E-6
D905	G-4	IC703	G-4	Q387	B-3	TP502	D-5
		IC704	G-4	Q388	B-3	TP503	D-5
IC1	A-7	IC705	G-4	Q390	C-2	TP504	D-5
IC2	B-7	IC706	G-5	Q400	C-4	TP505	D-4
IC3	C-7	IC707	F-5	Q500	B-1	TP506	D-3
IC101	B-6	IC710	F-1	Q501	B-1	TP507	D-2
IC102	A-6	IC711	F-1	Q502	D-7	TP700	F-4
IC104	A-6	IC728	F-1	Q503	*E-1	TP800	F-2
IC106	A-5	IC730	F-1	Q504	*E-1	TP801	G-3
IC107	A-5	IC731	F-1	Q505	*D-1	TP802	F-3
IC110	A-5	IC732	F-1	Q506	*D-2	TP803	F-3
IC111	A-5	IC734	F-1	Q507	*D-1	TP900	F-4
IC112	A-4	IC735	F-1	Q510	D-6	TP901	F-3
IC113	B-4	IC736	E-1	Q540	D-6		
IC114	B-4	IC800	F-2	Q541	D-6	*:B SIDE MOUNT	
IC115	A-4	IC801	F-3	Q542	D-5		
IC116	B-4	IC802	G-3	Q543	D-5		
IC117	A-3	IC803	G-3	Q544	D-5		
IC118	B-3	IC804	F-3	Q567	*D-3		
IC119	B-3	IC805	F-3	Q568	D-4		
IC121	A-2	IC900	*F-2	Q569	D-4		
IC122	A-2	IC901	F-4	Q570	*D-4		
IC123	A-2	IC902	F-6	Q571	D-4		
IC124	B-2	IC903	G-6	Q572	D-4		
IC126	A-2	IC904	G-4	Q573	D-3		
IC127	A-2	IC906	E-5	Q574	D-4		
IC128	A-2	IC907	B-2	Q575	D-4		
IC129	B-2	IC908	B-5	Q577	D-4		
IC131	B-5	IC909	C-2	Q578	D-3		
IC300	C-6	IC910	C-5	Q579	*D-4		
IC301	C-6	IC911	E-2	Q580	D-3		
IC302	C-6	IC912	F-6	Q581	D-3		
IC303	C-6			Q590	E-2		
IC304	C-6	Q100	A-1	Q600	D-3		
IC305	C-6	Q101	A-1	Q700	*B-5		
IC306	B-5	Q102	D-7	Q701	*C-5		
IC307	C-5	Q103	*B-1	Q702	*E-5		
IC310	C-4	Q104	*B-1	Q705	G-4		
IC311	C-4	Q105	*A-1	Q706	G-4		
IC312	B-4	Q106	*B-2	Q800	*E-1		
IC313	C-4	Q107	*C-2	Q801	D-1		
IC314	C-4	Q108	*B-2	Q802	F-2		
IC315	C-4	Q140	A-6	Q803	F-2		
IC316	C-4	Q141	A-6	Q804	F-2		
IC317	C-3	Q142	A-5	Q805	F-2		
IC318	C-3	Q143	A-5	Q806	F-2		
IC319	C-3	Q144	A-5	Q807	*F-6		
IC320	C-6	Q164	*A-3	Q808	F-2		
IC321	B-2	Q165	A-4	Q809	G-2		
IC322	C-2	Q166	A-4	Q810	G-2		
IC323	C-2	Q167	*A-4	Q811	F-2		
IC324	C-2	Q168	A-4	Q812	*G-5		



BK –A SIDE–
1-667-740-11



BK –B SIDE–
1-667-740-11

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BC
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1-668-433-11
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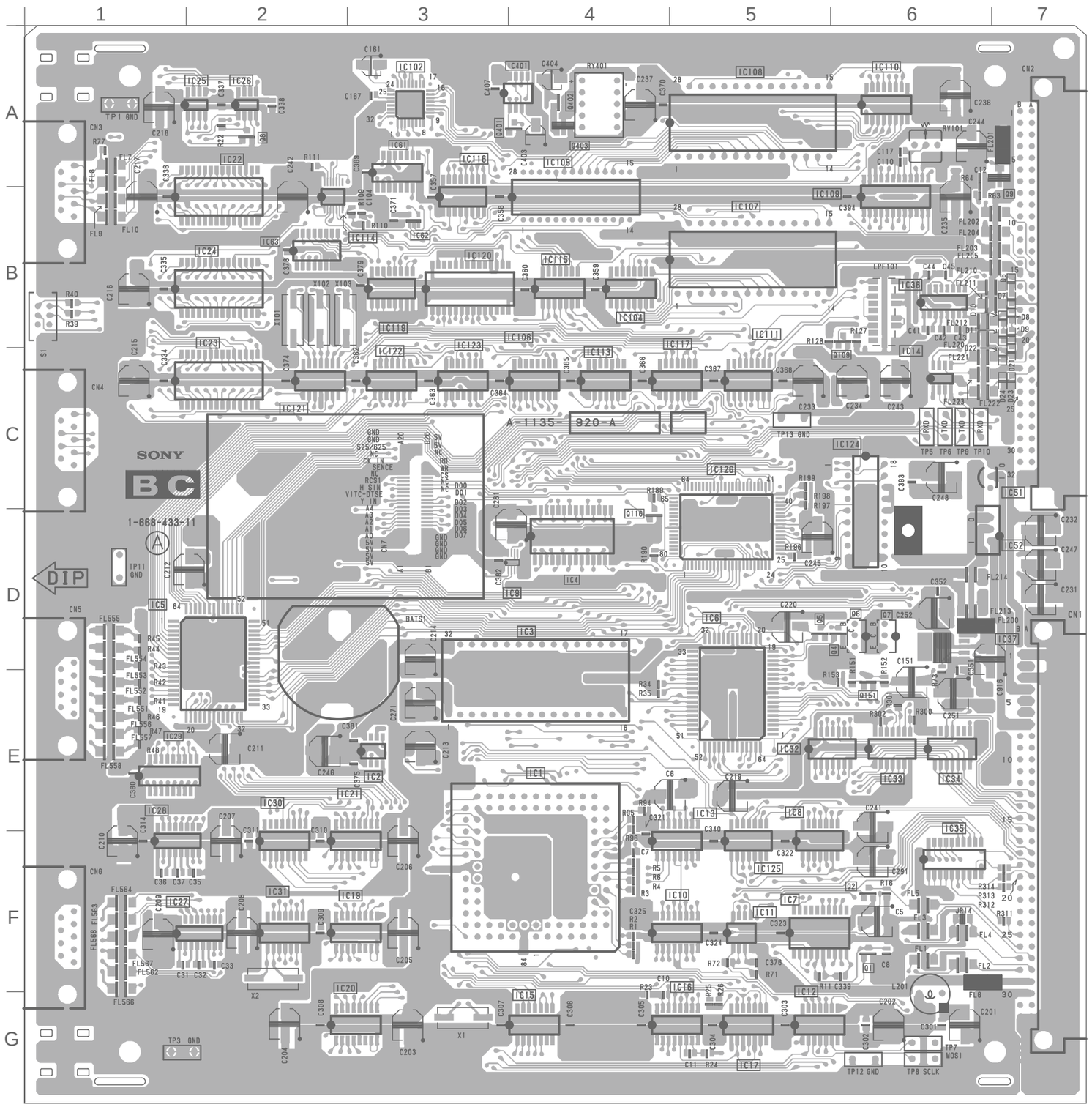
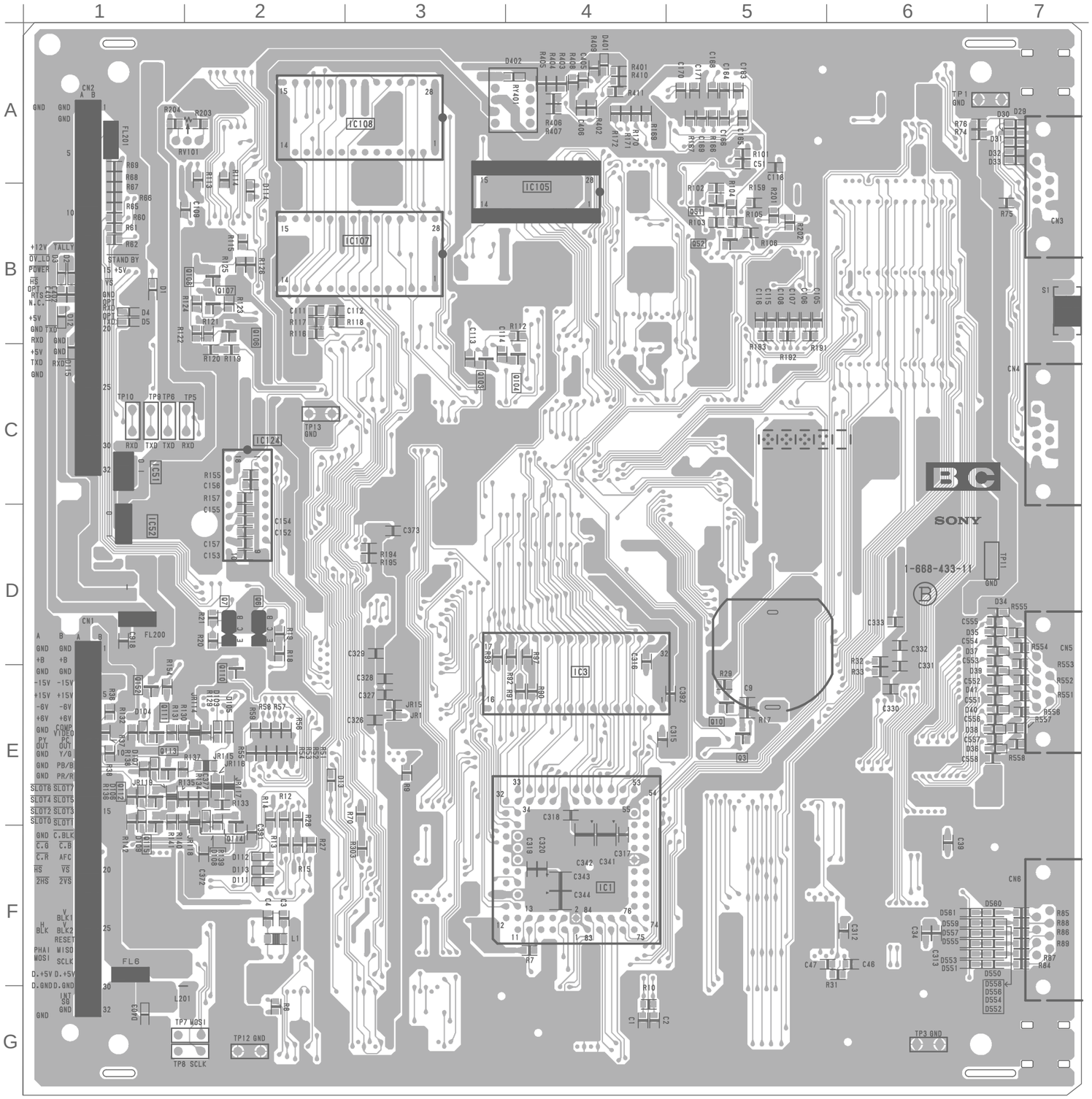
D1	*B-1	IC35	F-6
D2	*B-1	IC36	B-6
D3	*B-1	IC37	D-6
D4	*B-1	IC51	C-7
D5	*B-1	IC52	D-7
D6	B-7	IC61	A-3
D7	B-7	IC62	B-3
D8	B-7	IC63	B-2
D9	B-7	IC104	B-4
D10	B-7	IC105	B-4
D11	B-7	IC106	C-4
D12	*B-1	IC107	B-5
D13	*E-2	IC108	A-5
D21	C-7	IC109	B-6
D22	C-7	IC110	A-6
D23	C-7	IC111	C-5
D24	C-7	IC113	C-4
D29	*A-7	IC114	B-2
D30	*A-7	IC115	B-4
D31	*A-7	IC116	B-3
D32	*A-7	IC117	C-5
D33	*A-7	IC119	B-3
D34	*D-7	IC120	B-3
D35	*D-7	IC121	C-2
D36	*E-7	IC122	C-3
D37	*D-7	IC123	C-3
D38	*E-7	IC124	C-6
D39	*E-7	IC125	F-5
D40	*E-7	IC401	A-4
D41	*E-7		
D103	*E-2	Q1	F-6
D104	*E-1	Q2	F-6
D105	*E-2	Q3	*E-5
D106	*E-1	Q4	D-6
D107	*E-1	Q5	D-5
D108	*E-2	Q6	D-6
D109	*E-1	Q7	D-6
D111	*F-2	Q8	A-2
D112	*F-2	Q9	A-7
D113	*F-2	Q10	*E-5
D114	*B-2	Q51	*B-5
D115	*C-1	Q52	*B-5
D401	*A-4	Q103	*C-3
D402	*A-4	Q104	*C-4
D403	*G-1	Q106	*B-2
D550	*F-7	Q107	*B-2
D551	*F-6	Q108	*B-2
D552	*F-7	Q109	B-6
D553	*F-6	Q110	*E-2
D554	*F-7	Q111	*E-1
D555	*F-6	Q112	*E-1
D556	*F-7	Q113	*E-1
D557	*F-6	Q114	*E-2
D558	*F-7	Q115	*E-1
D559	*F-6	Q116	D-4
D560	*F-7	Q151	E-6
D561	*F-6	Q152	*E-1
		Q401	A-4
IC1	F-4	Q402	A-4
IC2	E-3	Q403	A-4
IC3	E-4		
IC4	D-4	RV101	A-6
IC5	D-2		
IC6	E-5	TP1	A-1
IC7	F-5	TP3	G-1
IC8	F-5	TP5	C-6
IC9	D-4	TP6	C-6
IC10	F-5	TP7	G-6
IC11	F-5	TP8	G-6
IC12	G-5	TP9	C-6
IC13	F-5	TP10	C-6
IC14	C-6	TP11	D-1
IC15	G-4	TP12	G-6
IC16	G-5	TP13	C-5
IC17	G-5		
IC19	F-3	*:B SIDE MOUNT	
IC20	G-3		
IC21	F-3		
IC22	B-2		
IC23	C-2		
IC24	B-2		
IC25	A-2		
IC26	A-2		
IC27	F-2		
IC28	F-2		
IC29	E-1		
IC30	F-2		
IC31	F-2		
IC32	E-6		
IC33	E-6		
IC34	E-6		



BC –A SIDE–
1-668-433-11



BC –B SIDE–
1-668-433-11

E E

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E
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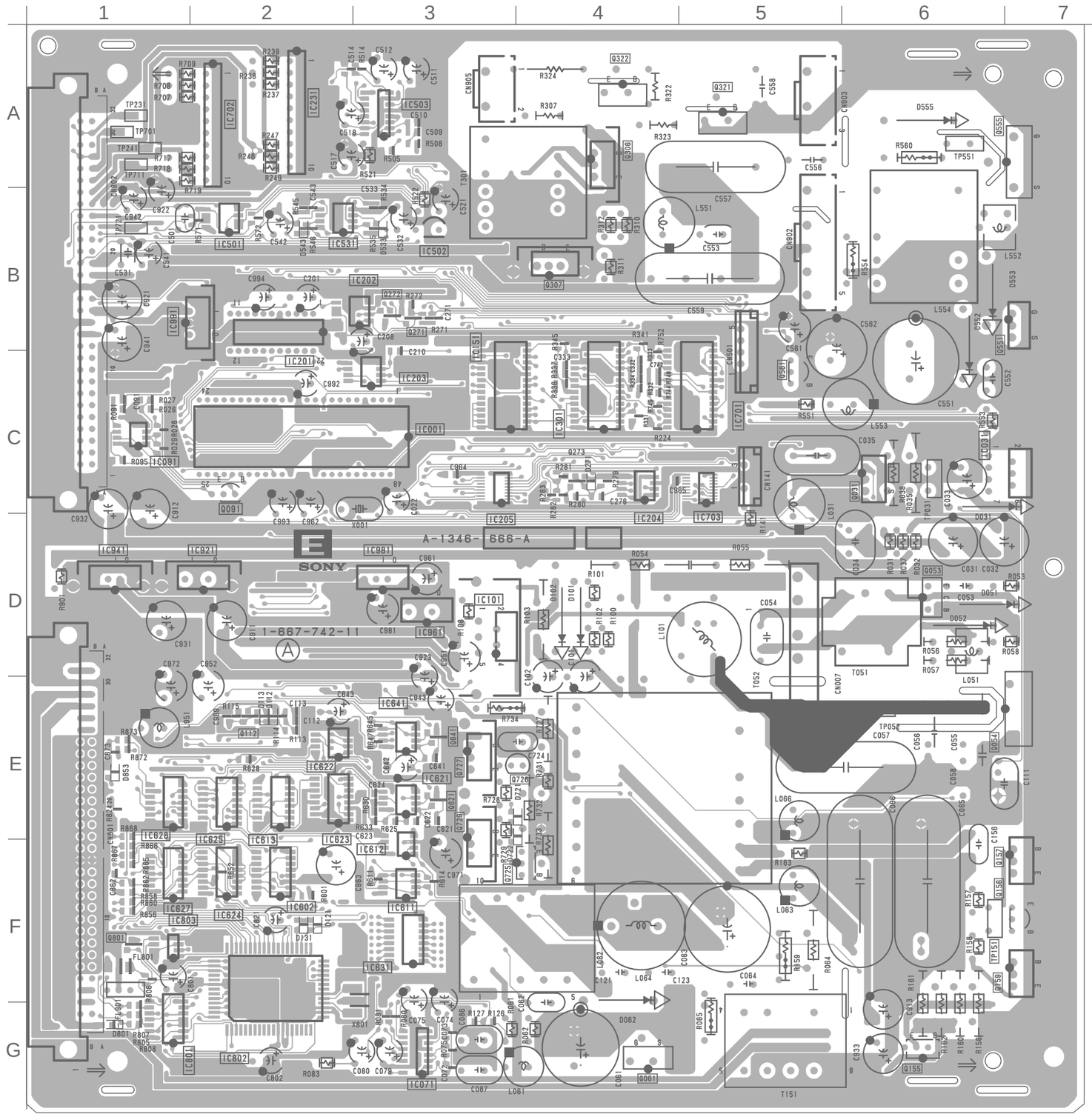
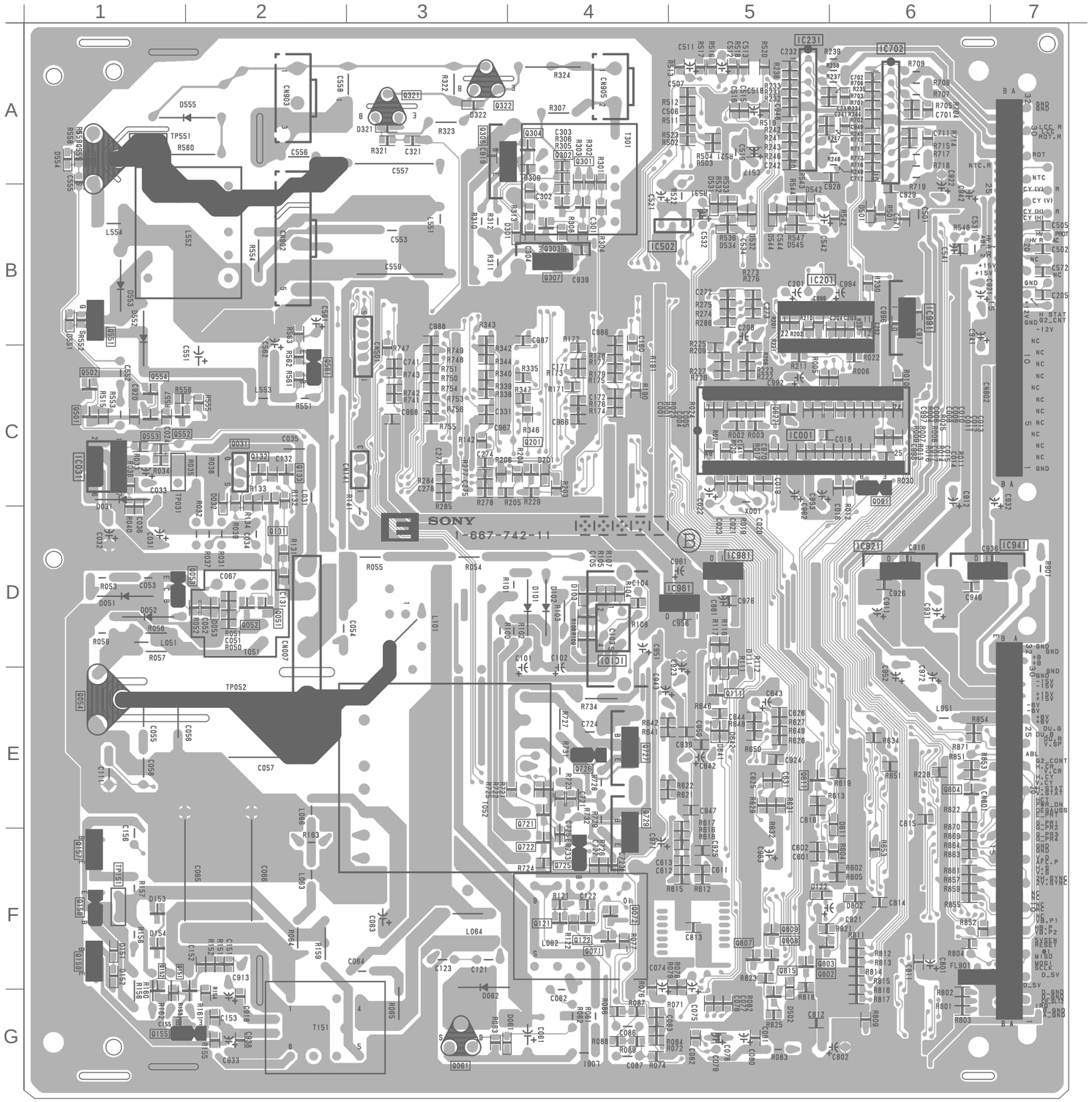
1-667-742-11

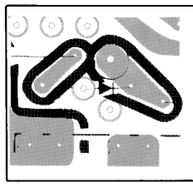
	D031	C-7	Q091	C-2
	D061	*G-4	Q111	*E-5
	D062	F-4	Q112	E-2
	D101	D-4	Q121	*F-4
	D102	D-4	Q122	*F-4
	D103	*D-4	Q131	*C-2
	D111	*E-5	Q132	*C-2
	D112	E-2	Q133	*C-2
	D113	E-2	Q151	*F-2
	D121	F-2	Q152	*F-2
	D122	*F-5	Q155	G-6
	D131	F-2	Q156	F-7
	D151	*F-1	Q157	F-7
	D152	*F-1	Q159	F-7
	D153	*F-1	Q201	*C-4
	D154	*F-1	Q271	B-3
	D201	*C-4	Q272	B-3
	D271	C-4	Q273	C-4
	D301	*B-4	Q301	*B-4
	D321	*A-3	Q302	*B-4
	D322	*A-3	Q303	*B-4
	D501	*B-6	Q304	*A-4
	D502	*F-5	Q306	A-4
	D531	*B-5	Q307	B-4
	D532	*B-5	Q321	A-5
	D533	B-3	Q322	A-4
	D534	*B-5	Q501	*C-1
	D542	*B-5	Q502	*C-1
	D543	B-2	Q551	B-7
	D544	*B-5	Q552	*C-2
	D545	*B-5	Q553	*C-1
	D551	*B-1	Q554	*C-1
	D552	C-6	Q555	A-7
	D553	B-6	Q561	C-5
	D554	*A-1	Q611	*E-5
	D555	A-6	Q621	E-3
	D611	*E-6	Q622	*C-5
	D641	*E-5	Q641	E-3
	D642	*E-5	♦Q721	*E-4
♦	D721	E-4	♦Q722	*F-4
♦	D722	E-4	♦Q725	F-4
	D801	G-1	♦Q726	E-4
	D802	*F-6	♦Q727	E-3
	D853	E-1	♦Q729	F-3
			Q801	F-1
	IC001	C-2	Q802	*F-5
	IC031	C-7	Q803	*F-6
	IC071	G-3	Q804	*E-6
	IC091	C-1	Q807	*F-5
	IC101	D-3	Q808	*F-5
	IC151	C-3	Q809	*F-5
	IC201	B-2	Q815	*G-5
	IC202	B-3		
	IC203	C-3	TP031	C-6
	IC204	C-4	TP052	E-6
	IC205	C-3	TP151	F-6
	IC231	A-2	TP231	A-1
	IC301	C-4	TP241	A-1
	IC501	B-2	TP551	A-6
	IC502	B-3	♦TP701	A-1
	IC503	A-3	♦TP711	A-1
	IC531	B-2	♦TP721	B-1
	IC602	F-2		
	IC611	F-3	♦:BVM-20G1 only	
	IC612	F-3	*:B SIDE MOUNT	
	IC613	E-2		
	IC621	E-3		
	IC622	E-2		
	IC623	E-2		
	IC625	E-2		
	IC627	F-1		
	IC628	E-1		
	IC641	E-3		
♦	IC701	C-5		
♦	IC702	A-2		
♦	IC703	C-5		
	IC801	G-1		
	IC802	F-2		
	IC803	F-1		
	IC921	D-2		
	IC941	D-1		
	IC961	D-3		
	IC981	D-3		
	IC991	B-2		
	Q051	*D-2		
	Q053	D-6		
	Q054	E-7		
	Q061	G-4		
	Q071	*F-4		
	Q072	*F-4		



11-6 11-6

E –A SIDE–
1-667-742-11





NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

E –B SIDE–
1-667-742-11

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G
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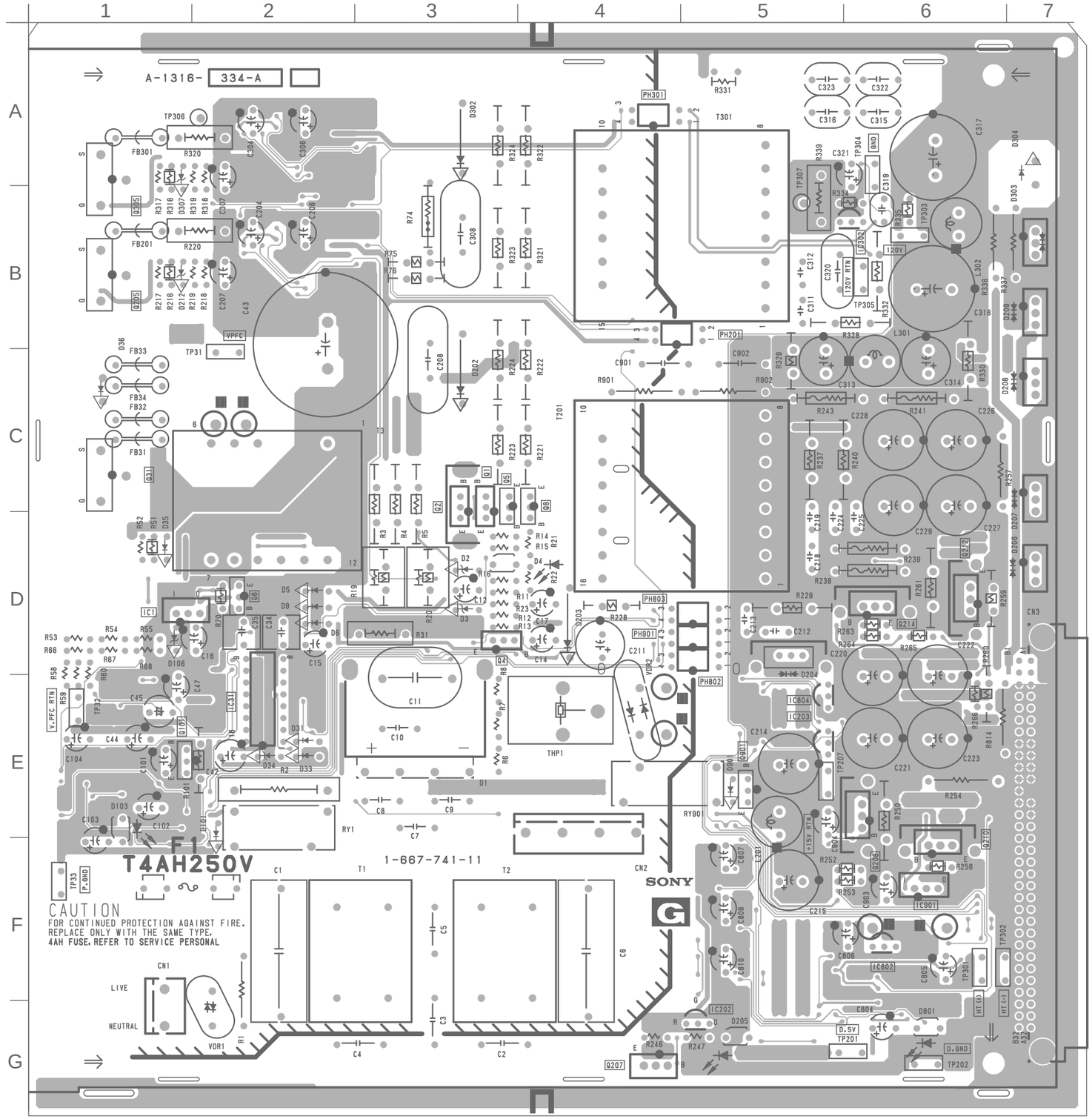
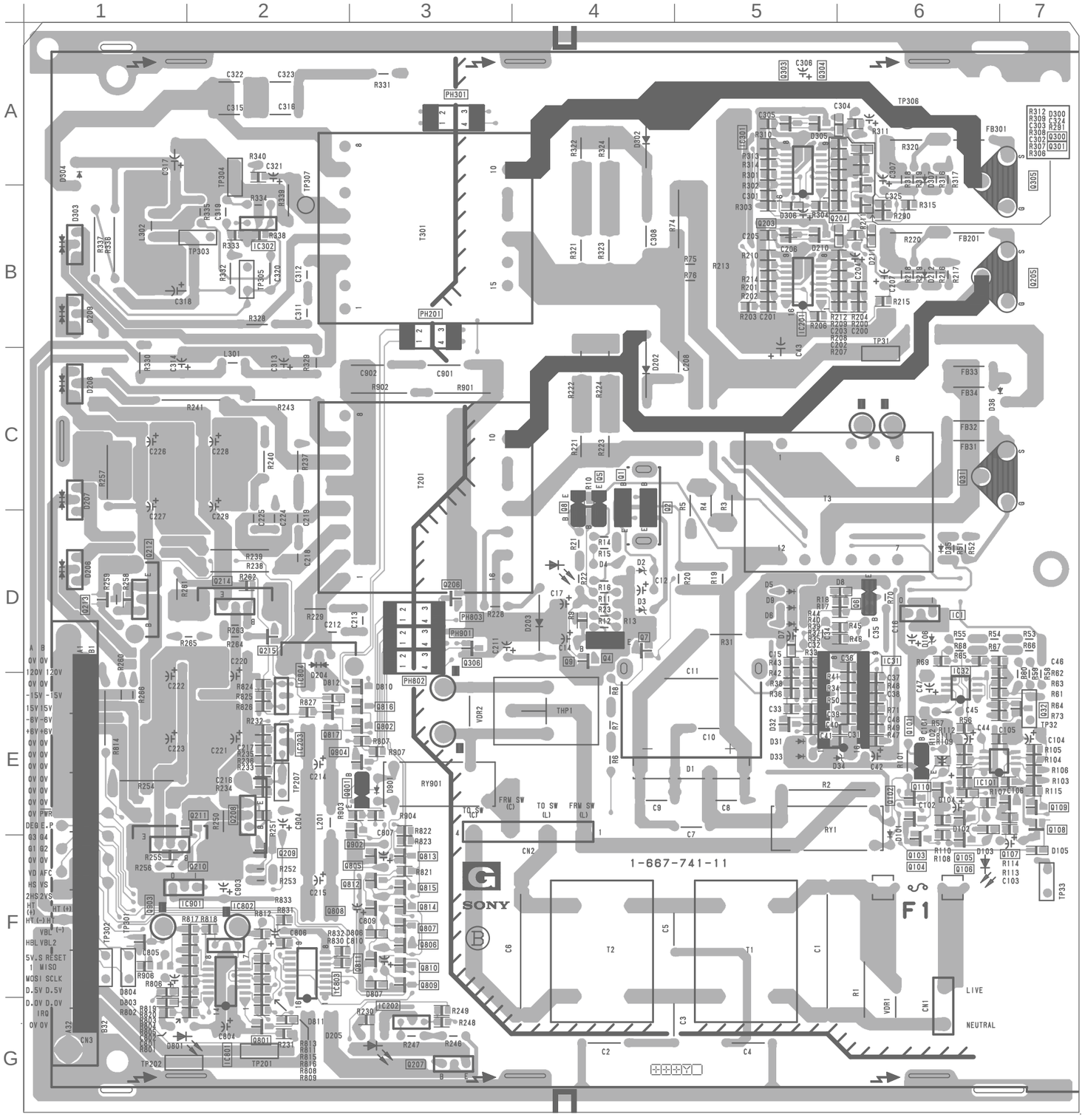
1-667-741-11

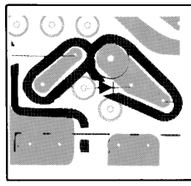
D1	E-3	Q211	*E-2
D2	D-3	Q212	D-6
D3	D-3	Q213	*D-1
D4	D-4	Q214	D-6
D5	D-2	Q215	*D-2
D6	D-2	Q300	*A-6
D8	*D-6	Q301	*B-6
D9	D-2	Q303	*A-5
D31	E-2	Q304	*A-5
D32	*E-5	Q305	A-1
D33	E-2	Q306	*D-3
D34	E-2	Q801	*G-2
D35	D-1	Q802	*E-2
D36	C-1	Q805	*F-3
D101	E-2	Q806	*F-3
D102	*E-6	Q807	*F-3
D103	E-1	Q808	*F-3
D104	*E-6	Q809	*F-3
D105	*F-7	Q810	*F-3
D106	D-1	Q811	*F-3
D202	C-3	Q812	*F-3
D203	D-4	Q813	*F-3
D204	D-5	Q814	*F-3
D205	G-5	Q815	*F-3
D206	D-7	Q816	*E-2
D207	C-7	Q817	*E-2
D208	C-7	Q901	E-5
D209	B-7	Q902	*D-3
D210	*B-6	Q903	*F-1
D211	*B-6	Q904	*E-3
D212	B-1		
D300	*A-6	PH201	B-5
D302	A-3	PH301	A-4
D303	B-7	PH802	D-5
D304	A-7	PH803	D-5
D305	*A-6	PH901	D-5
D306	*B-5		
D307	A-1	TP31	C-2
D801	G-6	TP32	E-1
D803	*F-1	TP33	F-1
D804	*F-1	TP201	G-6
D806	*F-3	TP202	G-6
D807	*F-3	TP207	E-5
D810	*E-3	TP301	F-6
D811	*G-2	TP302	F-7
D812	*E-2	TP303	B-6
D901	E-5	TP304	A-6
		TP305	B-6
IC1	D-1	TP307	B-5
IC31	E-2	TP308	A-2
IC32	*E-6		
IC101	*E-6	*:B SIDE MOUNT	
IC201	*B-5		
IC202	G-5		
IC203	E-5		
IC301	*A-5		
IC302	B-6		
IC801	*F-2		
IC802	F-6		
IC803	*F-2		
IC804	E-5		
IC901	F-6		
Q1	C-3		
Q2	C-3		
Q4	D-3		
Q5	C-3		
Q6	D-2		
Q7	*D-4		
Q8	C-4		
Q9	*D-4		
Q31	C-1		
Q32	*E-7		
Q101	E-1		
Q102	*E-6		
Q103	*E-6		
Q104	*E-6		
Q105	*E-6		
Q106	*E-6		
Q107	*E-7		
Q108	*E-7		
Q109	*E-7		
Q110	*E-6		
Q203	*B-5		
Q204	*B-5		
Q205	B-1		
Q206	*D-3		
Q207	G-4		
Q208	E-6		
Q209	*F-2		
Q210	F-6		



11-8 11-8

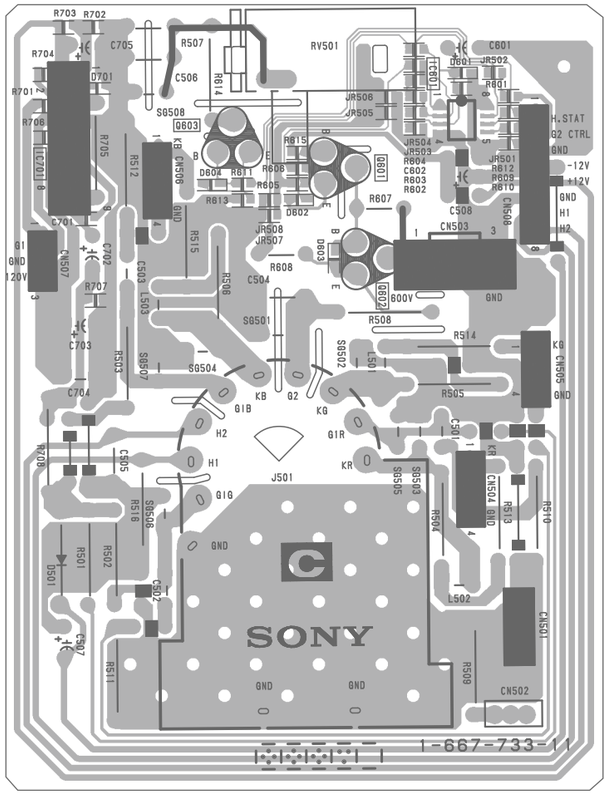
G –A SIDE–
1-667-741-11



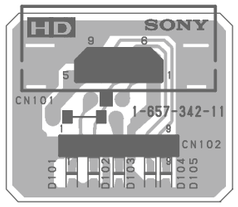


NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

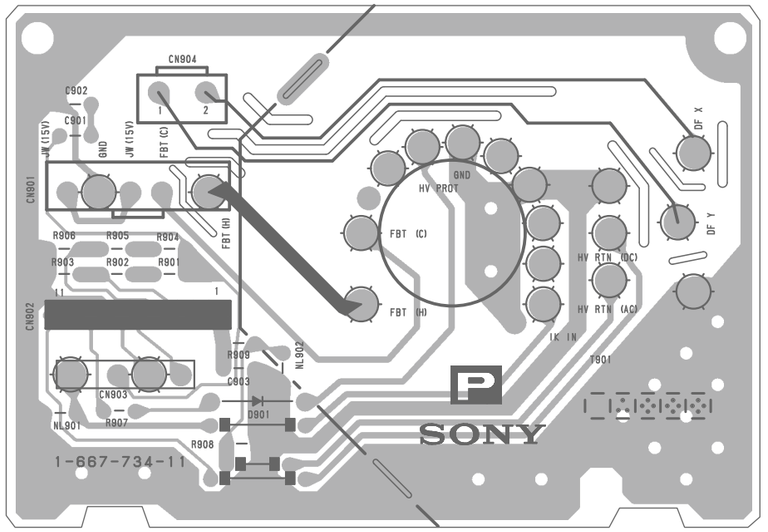
G –B SIDE–
1-667-741-11



C –B SIDE–
1-667-733-11

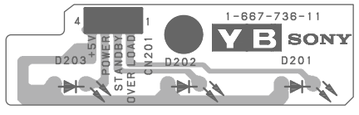


HD –B SIDE–
1-657-342-11
BVM-14G1/20G1,
BKM-10R

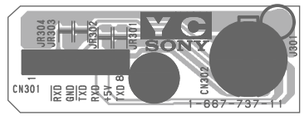


P –B SIDE–
1-667-734-11

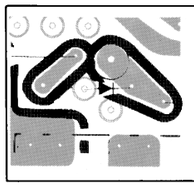
YA –B SIDE–
1-667-735-11



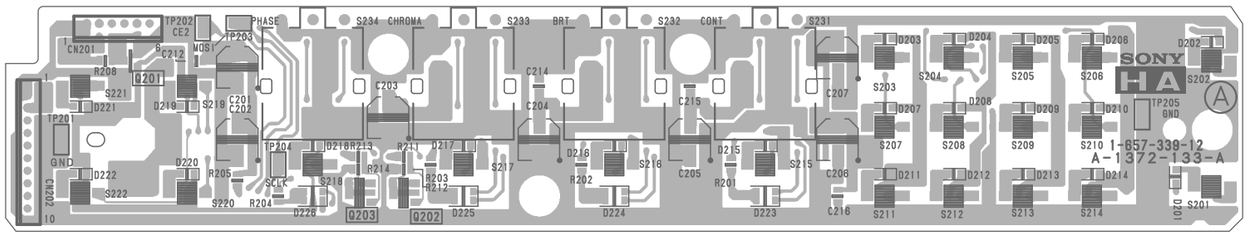
YB –B SIDE–
1-667-736-11



YC –B SIDE–
1-667-737-11



NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.



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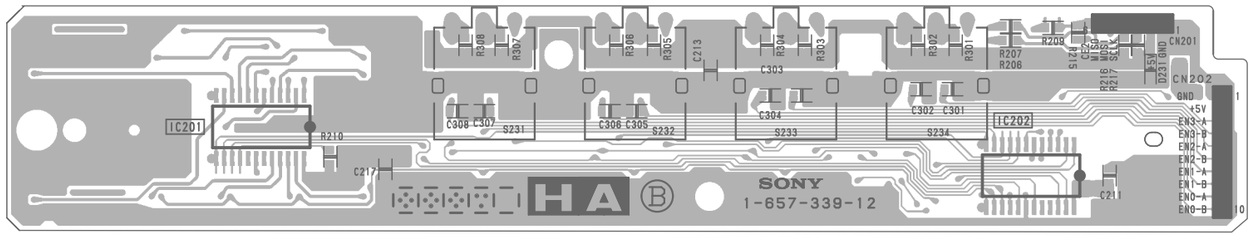
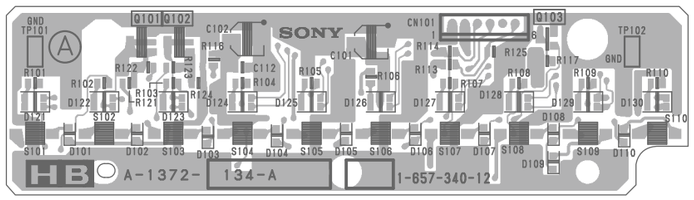
1-657-339-12
BVM-14G5, BKM-10R



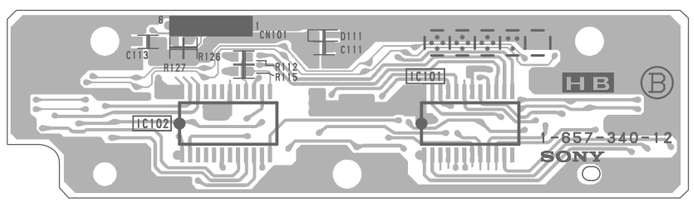
HA –B SIDE–

1-657-339-12
BVM-14G5, BKM-10R



HB –A SIDE–

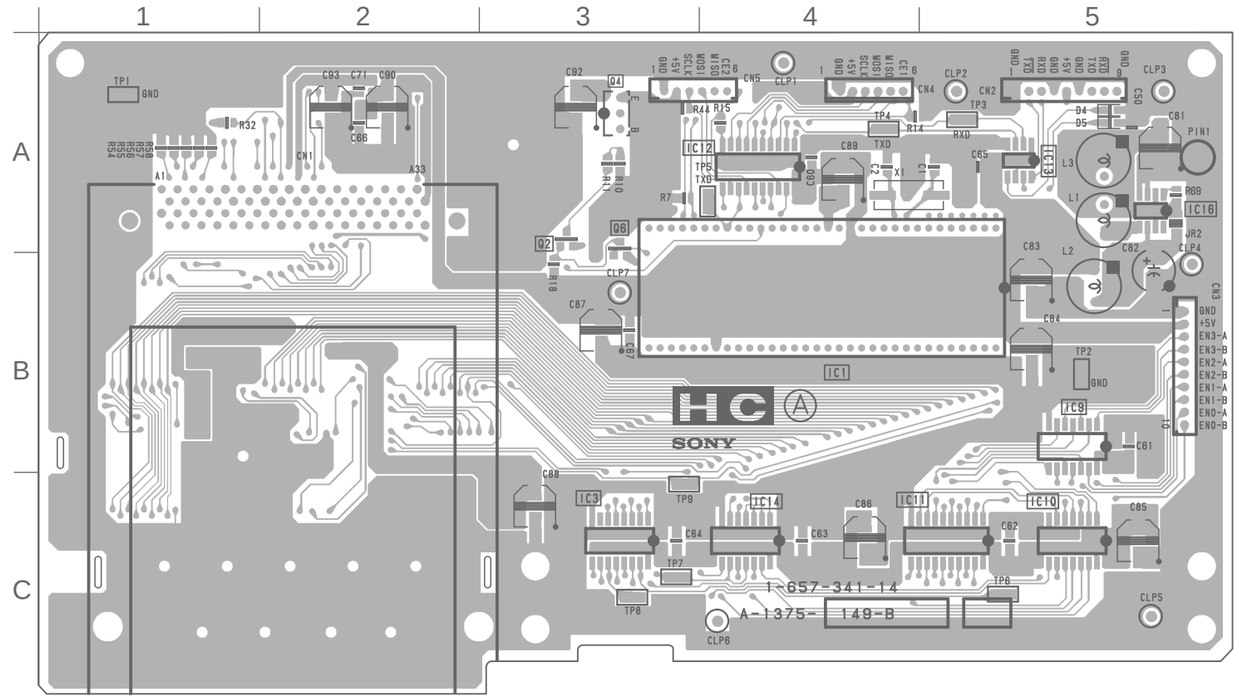
1-657-340-12
BVM-14G5, BKM-10R



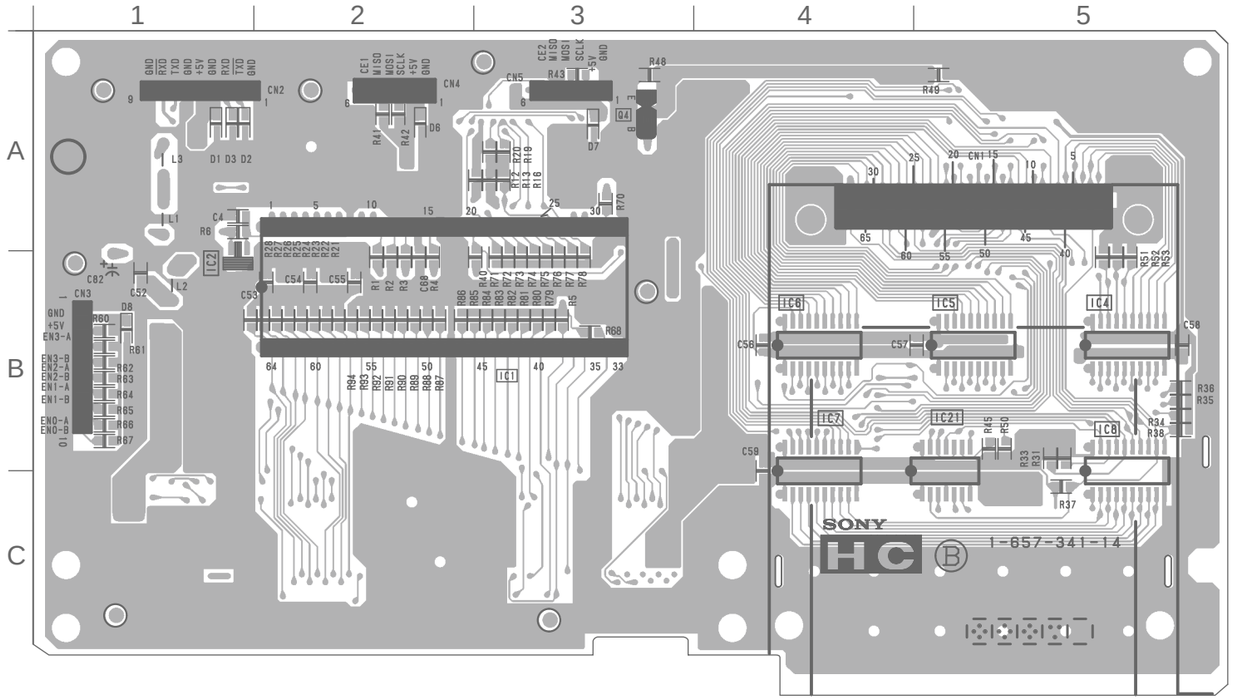
HB –B SIDE–

1-657-340-12
BVM-14G5, BKM-10R

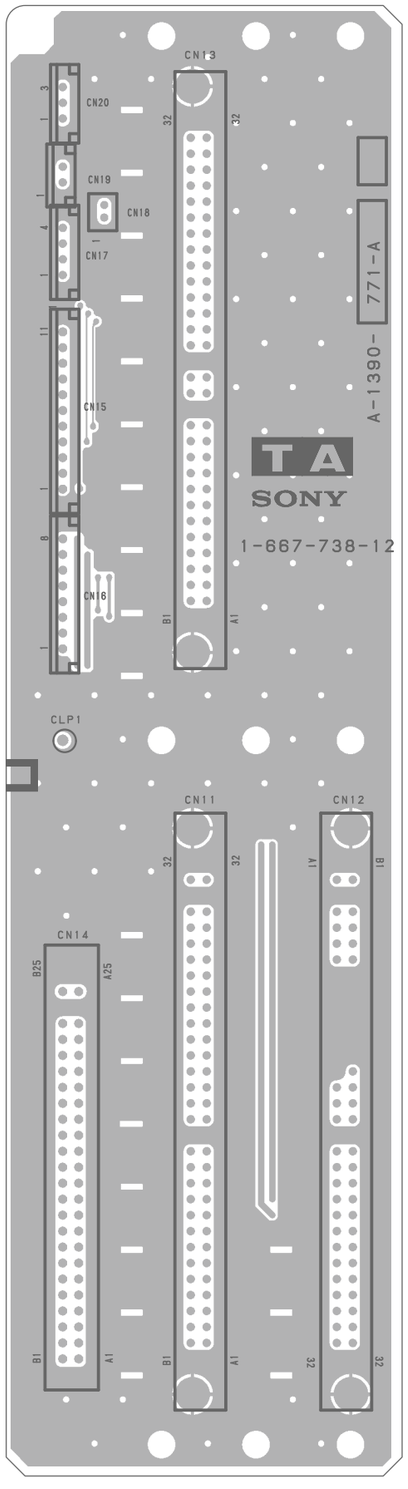
```
--
HC
--
1-657-341-14

 D1        * A-1
 D2        * A-1
 D3        * A-1
 D4          A-5
 D5          A-5
 D6        * A-2
 D7        * A-3
 D8        * B-1

 IC1         B-4
 IC2       * B-1
 IC3         C-3
 IC4       * B-5
 IC5       * B-5
 IC6       * B-4
 IC7       * B-4
 IC8       * B-5
 IC9         B-5
 IC10        C-5
 IC11        C-5
 IC12        A-4
 IC13        A-5
 IC14        C-3
 IC16        A-5
 IC21      * B-5

 Q2          A-3
 Q4          A-3
 Q6          A-3

 TP1         A-1
 TP2         B-5
 TP3         A-5
 TP4         A-4
 TP5         A-4
 TP6         C-5
 TP7         C-3
 TP8         C-3
 TP9         C-3
```



HC **–A SIDE–**
1-657-341-14
BVM-14G5, BKM-10R



HC **–B SIDE–**
1-657-341-14
BVM-14G5, BKM-10R



TA –A SIDE–
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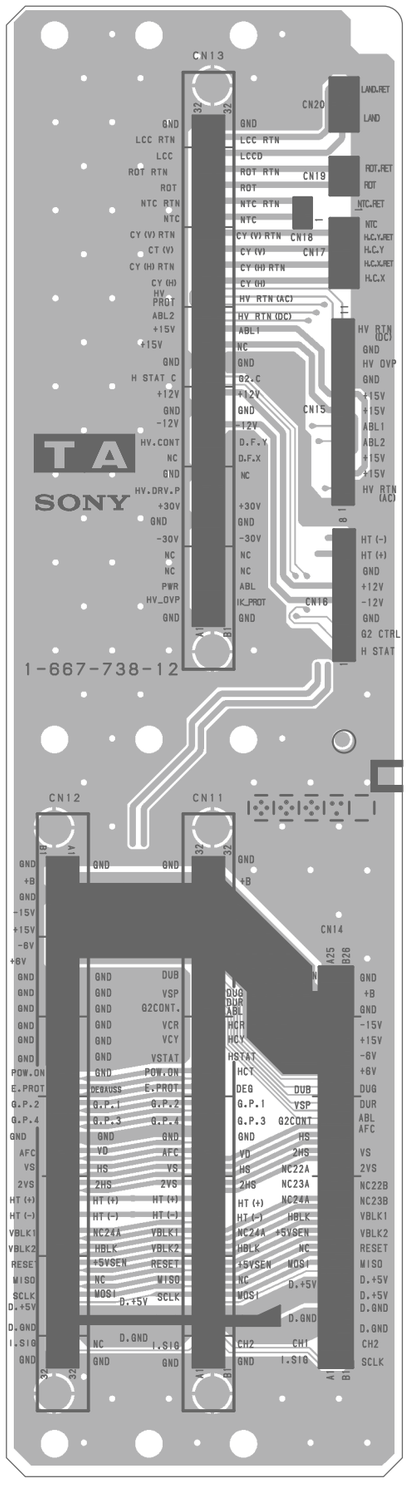

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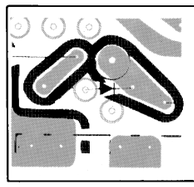
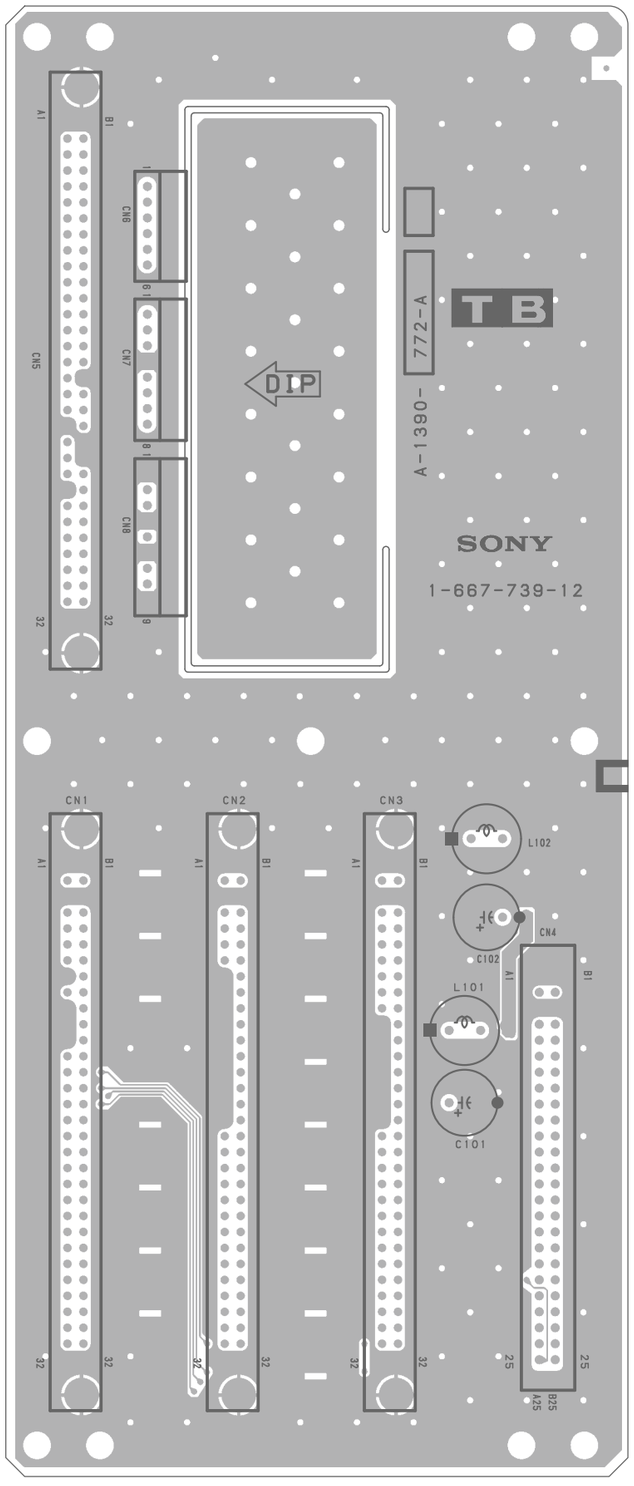


NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.



TB –A SIDE–
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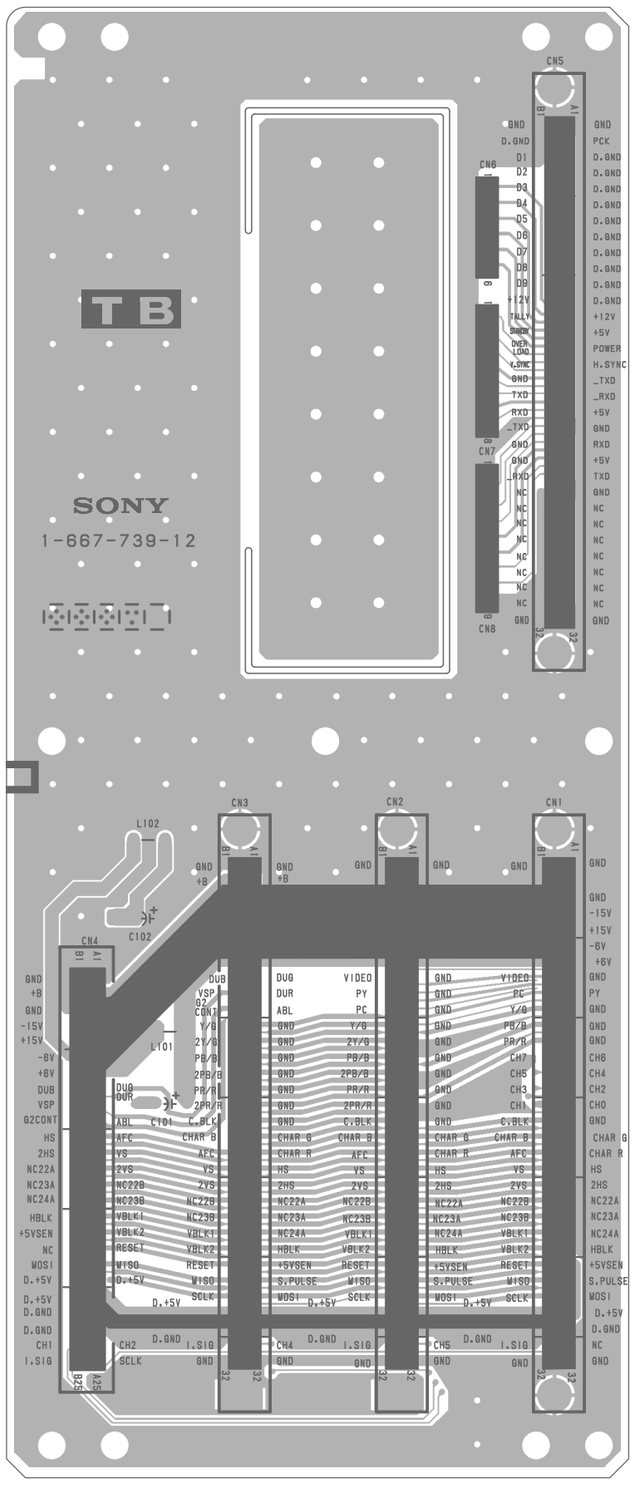

TB –B SIDE–
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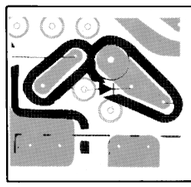


NOTE:
The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

11-2. SCHEMATIC DIAGRAMS

Board	Function	Page
FRAME (1/3)	—	11-17
FRAME (2/3)	—	11-18
FRAME (3/3)	—	11-19
BK (1/9)	Signal Selector, R.G.B Gain Control	11-20
BK (2/9)	G–Y Matrix, Y. PB/PR Mix, Signal Processor, Blue Only SW	11-21
BK (3/9)	R.G.B Signal Processing, R.G.B Drive	11-22
BK (4/9)	R Drive Out, R Drive IK/V Control	11-23
BK (5/9)	G Drive Out, G Drive IK/V Control	11-24
BK (6/9)	B Drive Out, B Drive IK/V Control	11-25
BK (7/9)	Pulse Generator, G2. BRT. CONTR Control	11-26
BK (8/9)	H/V Sync Separator, Y/C Clamp P Generator	11-27
BK (9/9)	System Control, D/A Converter	11-28
BC (1/4)	Micro Computer, Program ROM, S-RAM, Address Selector, Parallel In/Out, Chracter Gen.	11-31
BC (2/4)	Serial Control, RS485/RS232C Interface	11-32
BC (3/4)	Signal Generator, Internal Signal Data, Counter, Closed Caption Display, PLL, D/A Converter	11-33
BC (4/4)	Slot Receiver, Sample Pulse Gen., RS422 Interface, Charactor Out, Current Limitter	11-34
E (1/4)	System Control, H BLK/V BLK P Gen., H/V Sync Gen., EEPROM	11-37
E (2/4)	Signal Gen., PWM Control, HV REG/HV Out Switching, Dynamic Focus, Landing/NTC Out, H LIN Conv., D/A Converter	11-38
E (3/4)	Signal Generator, PWM Control, H/V Out, H LIN Amp.	11-39
E (4/4)	Signal Generator, CY H/CY V Out, ROT Out, D/A Converter	11-40
C	R.G.B Out, BLK Out, H.STAT Out	11-43
P	F.B.T	11-44
YA	Tally	11-45
YB	Indicator	11-45
YC	Relay	11-45
HD	Relay (BVM-14G1/20G1)	11-45
G (1/2)	PFC Control, Main Rect	11-46
G (2/2)	PWM Control, Converter Out, Protector Encoder, D+5V. ±6V. ±15V. +120V. HT Rect.	11-47
HA	Function Control (BVM-14G5, BKM-10R)	11-49
HB	Function Control (BVM-14G5, BKM-10R)	11-50
HC	CPU, Memory Card Driver, RS422 Driver, Card Address Decoder (BVM-14G5, BKM-10R)	11-51
TA	Mother	11-53
TB	Mother	11-54

Note:

- All capacitors are in µF unless otherwise noted. pF: µµF 50WV or less are not indicated except for electrolytics.
- Indication of resistance, which does not have one for rating electrical power, is as follows.

  Pitch: 5 mm
  Rating electrical power 1/4W

- All resistors are in ohms. (1M: 1000kΩ, 1k: 1000Ω)
- : nonflammable resistor.
- Chip resister are 1/10W unless otherwise noted.
- : fusible resistor.
- Δ : internal component.
- : panel designation and adjustment repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- METAL CHIP (:RN, :RN-CP) resister in 1%, 0.5%, 1/4W unless otherwise specified.
- The components identified by ⋈ in this basic schematic diagram have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation.
  Should replacement be required, replace only with the value originally used.
- When replacing components identified by ◪ , make the necessary adjustments indicated, If results do not meet the specified value change the component identified by ⋈ and repeat the adjustment until the specified value is achieved. (Refer to page 4-1 to 4-3.)

Part replaced (◪)	Checked
R307, R332, R333, R336, R337, R338, IC301, IC302, PH301 ..... G board	(+B VOLTAGE)
R501, R502, R503, R504, R505, R511, IC501, IC502, IC503 ..... E board	(HIGH VOLTAGE)
R571, IC501 ..... E board R901, R902, R903 ..... P board R912, R913, IC901 .... BK board	(BEAM CURRENT)
R531, R532, R533, R534, R542, R543, R544, R545, R548, IC071, IC502, IC531 ..... E board R904, R905, R906 ..... P board	(HOLD-DOWN)

- All voltages are in V.
- Reading are taken with Component color-bar signal (R.G.B SYNC) input.
- Voltage are dc with respect to ground unless otherwise noted.
- no mark : 14G1/14G5 series and comon
  ( ) : 20G1 series
- Voltage variation may be noted due to normal production tolerancd.
- : B+, B– line
- : signal path
- Circled numbers are waveforms reference.

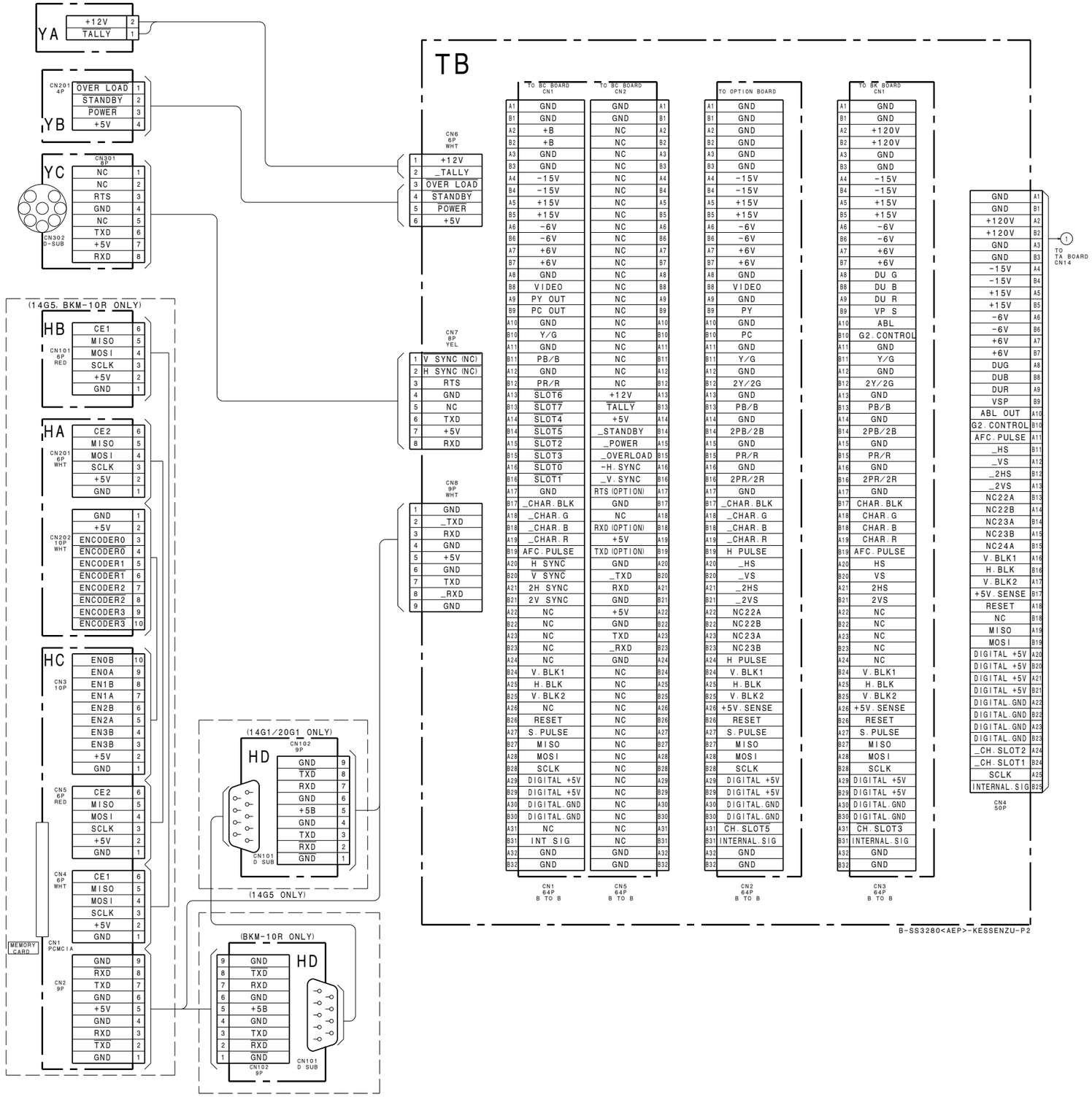
Reference information

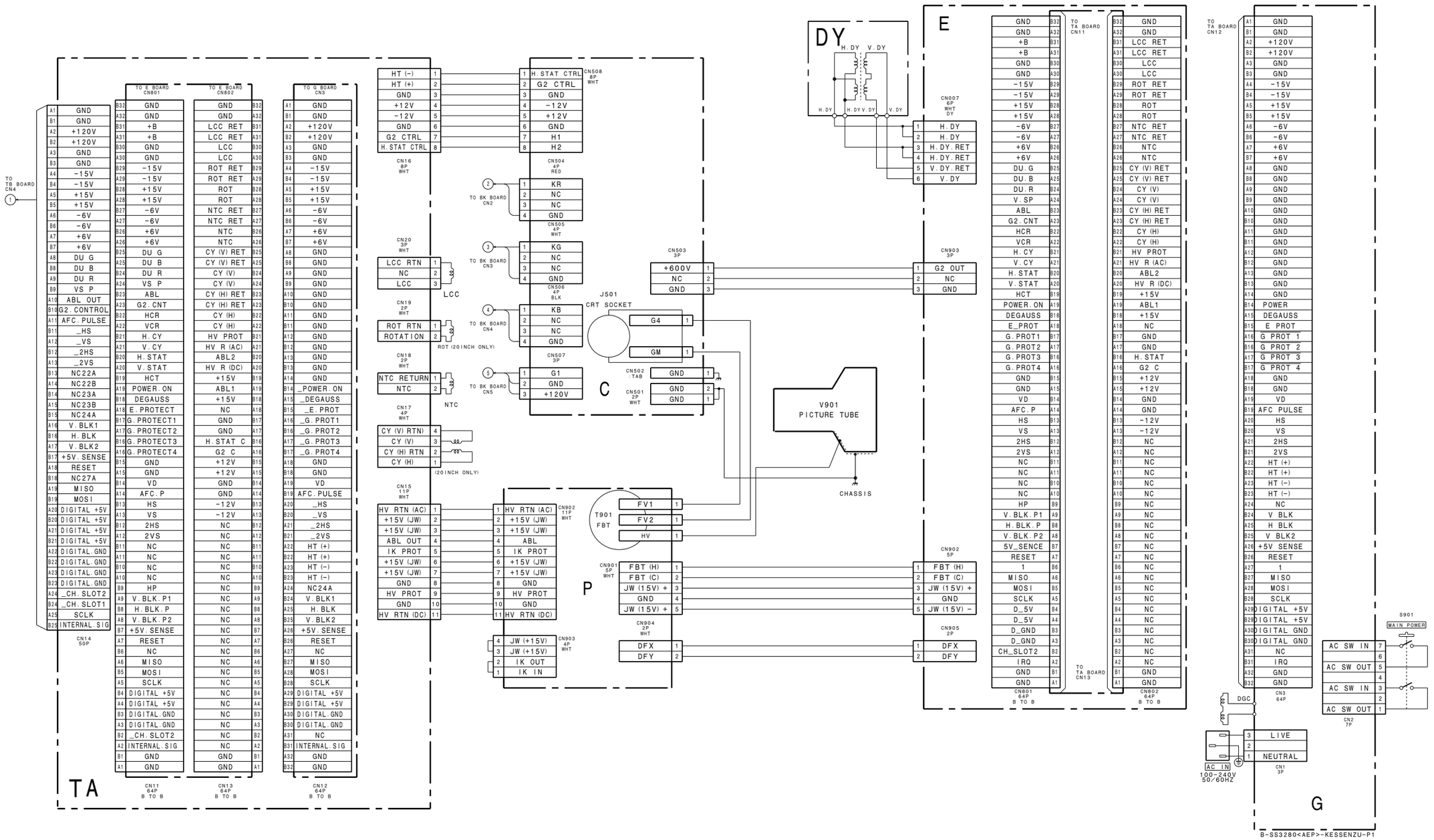
RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RW	NONFLAMMABLE WIREWOUND
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

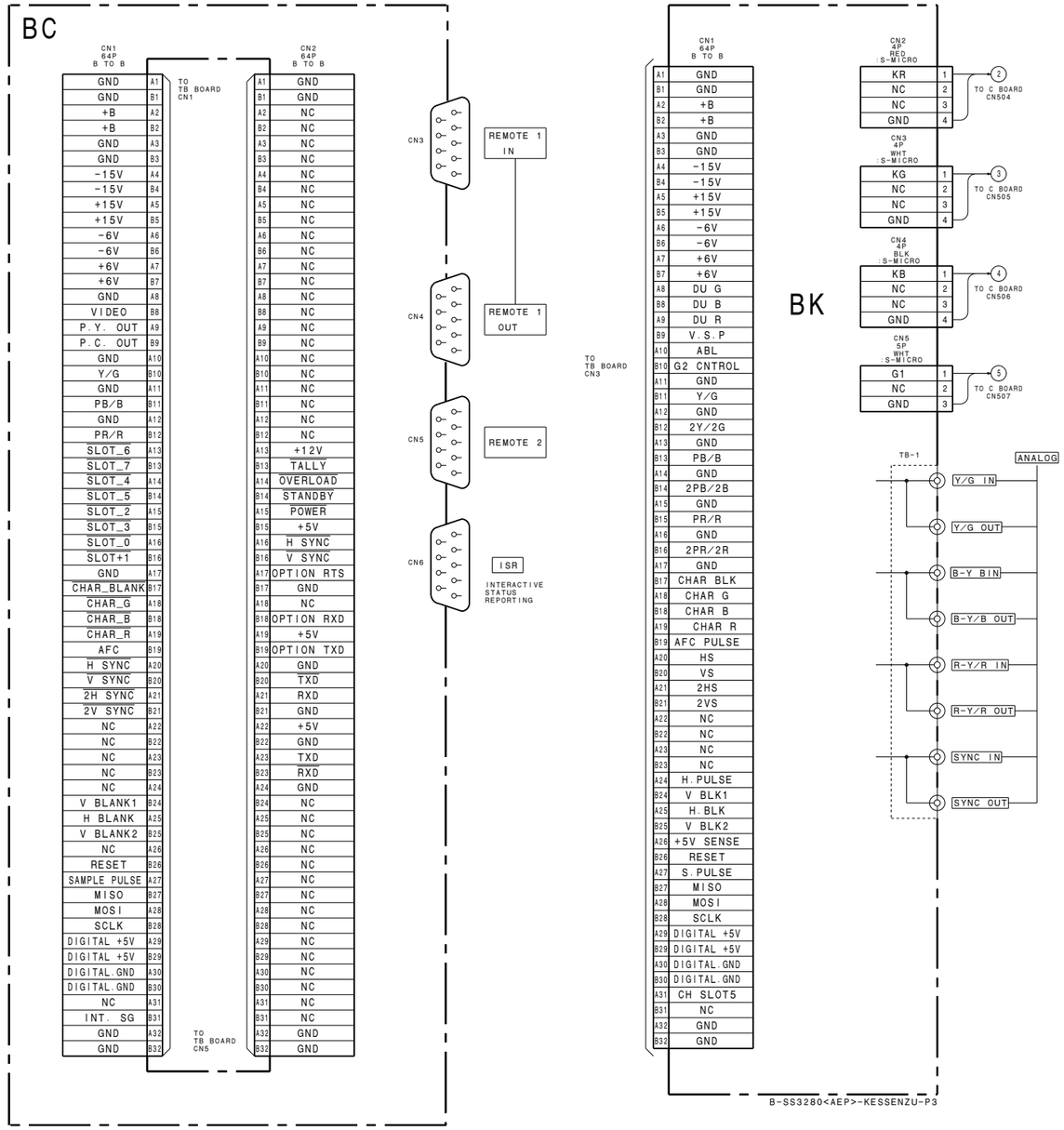
The components identified marked ⚠ are critical for safety.
Replace only with the part number specified.

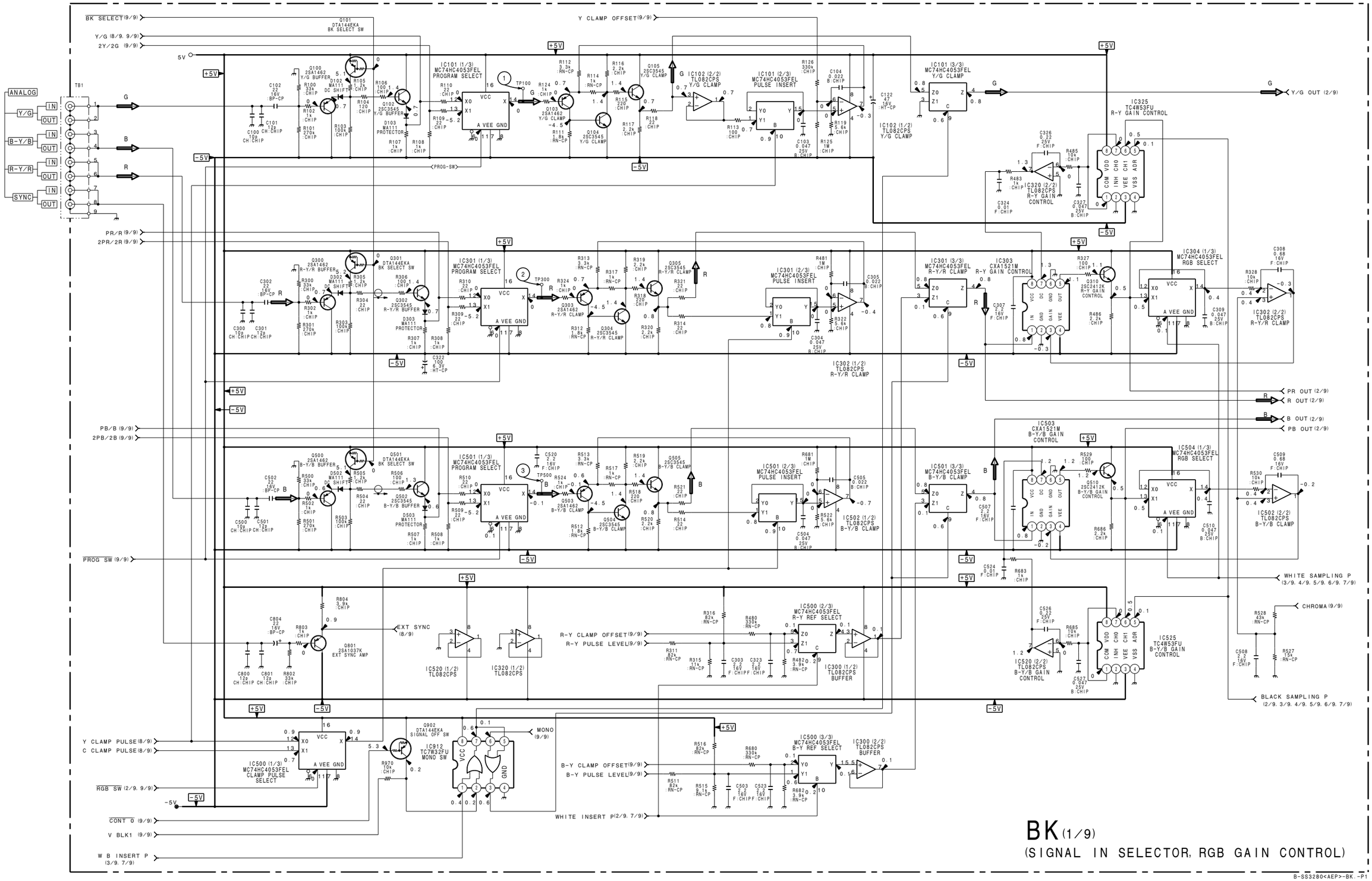
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

11-15

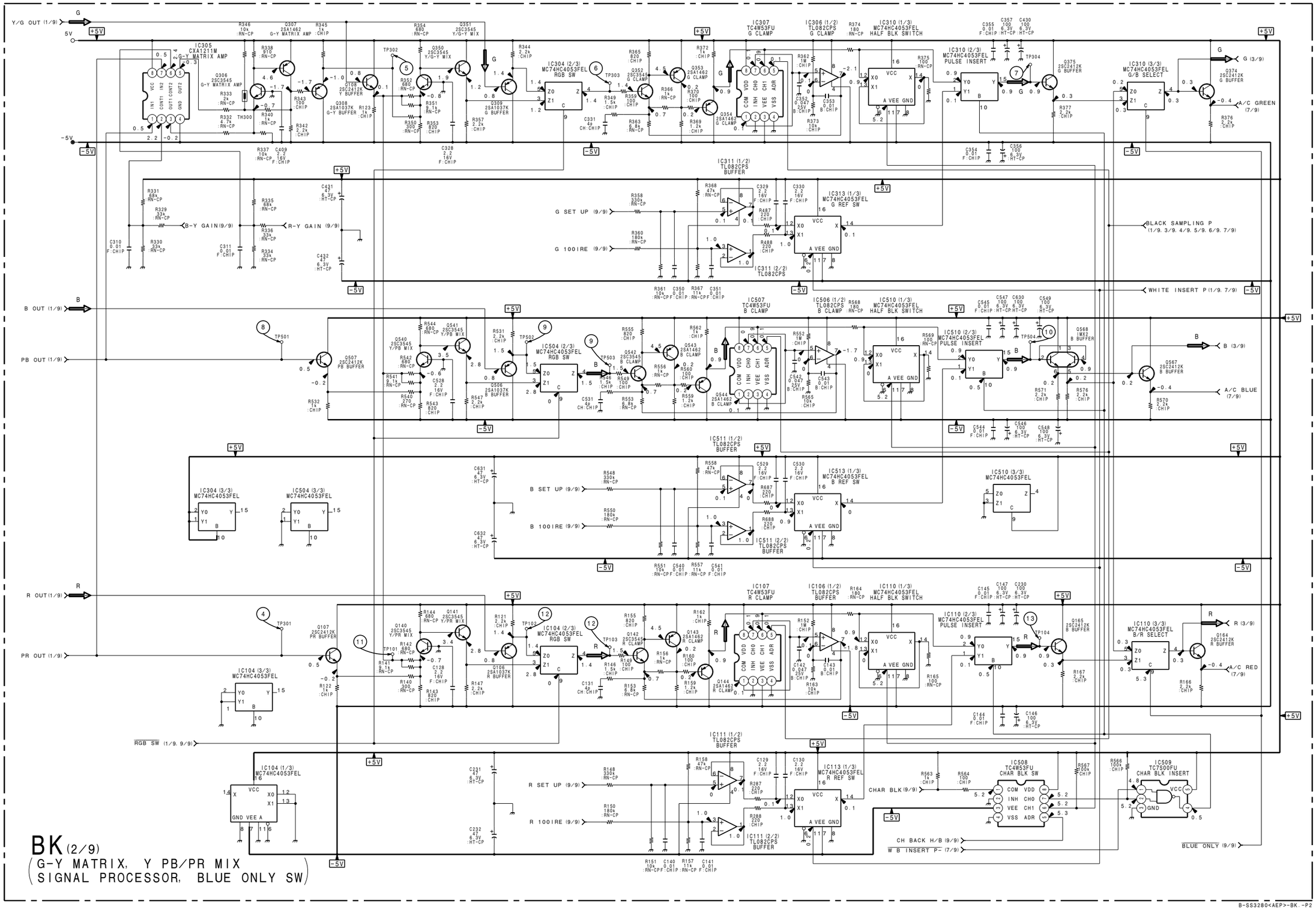

TB
YA
+12V 2
TALLY 1
YB
CN201 4P
OVER LOAD 1
STANDBY 2
POWER 3
+5V 4
YC
CN301 8P
NC 1
NC 2
RTS 3
GND 4
NC 5
TXD 6
+5V 7
RXD 8
CN302 D-SUB
(14G5, BKM-10R ONLY)
HB
CN101 6P RED
CE1 6
MISO 5
MOSI 4
SCLK 3
+5V 2
GND 1
HA
CN201 6P WHT
CE2 6
MISO 5
MOSI 4
SCLK 3
+5V 2
GND 1
CN202 10P WHT
GND 1
+5V 2
ENCODER0 3
ENCODER0 4
ENCODER1 5
ENCODER1 6
ENCODER2 7
ENCODER2 8
ENCODER3 9
ENCODER3 10
HC
CN3 10P
EN0B 10
EN0A 9
EN1B 8
EN1A 7
EN2B 6
EN2A 5
EN3B 4
EN3B 3
+5V 2
GND 1
CN5 6P RED
CE2 6
MISO 5
MOSI 4
SCLK 3
+5V 2
GND 1
CN4 6P WHT
CE1 6
MISO 5
MOSI 4
SCLK 3
+5V 2
GND 1
MEMORY CARD
CN1 PCMCIA
CN2 9P
GND 9
RXD 8
TXD 7
GND 6
+5V 5
GND 4
RXD 3
TXD 2
GND 1
(14G1/20G1 ONLY)
HD
CN102 9P
GND 9
TXD 8
RXD 7
GND 6
+5B 5
GND 4
TXD 3
RXD 2
GND 1
CN101 D SUB
(14G5 ONLY)
(BKM-10R ONLY)
HD
9 GND
8 TXD
7 RXD
6 GND
5 +5B
4 GND
3 TXD
2 RXD
1 GND
CN102 9P
CN101 D SUB
CN6 6P WHT
1 +12V
2 _TALLY
3 OVER LOAD
4 STANDBY
5 POWER
6 +5V
CN7 8P YEL
1 V SYNC (NC)
2 H SYNC (NC)
3 RTS
4 GND
5 NC
6 TXD
7 +5V
8 RXD
CN8 9P WHT
1 GND
2 _TXD
3 RXD
4 GND
5 +5V
6 GND
7 TXD
8 _RXD
9 GND
TO BC BOARD CN1
TO BC BOARD CN2
TO OPTION BOARD
TO BK BOARD CN1
CN1 64P B TO B
CN5 64P B TO B
CN2 64P B TO B
CN3 64P B TO B
GND A1 GND B1
GND B1 GND B1
+B A2 NC A2 GND B2 +120V B2
+B B2 NC B2 GND B2 +120V B2
GND A3 NC A3 GND B3 GND B3
GND B3 NC B3 GND B3 GND B3
-15V A4 NC A4 -15V B4 -15V B4
-15V B4 NC B4 -15V B4 -15V B4
+15V A5 NC A5 +15V B5 +15V B5
+15V B5 NC B5 +15V B5 +15V B5
-6V A6 NC A6 -6V B6 -6V B6
-6V B6 NC B6 -6V B6 -6V B6
+6V A7 NC A7 +6V B7 +6V B7
+6V B7 NC B7 +6V B7 +6V B7
GND A8 NC A8 GND B8 DU G B8
VIDEO B8 NC B8 VIDEO A9 DU B A9
PY OUT A9 NC A9 GND B9 DU R B9
PC OUT B9 NC B9 PY A10 VP S A10
GND A10 NC A10 GND B10 ABL B10
Y/G B10 NC B10 PC A11 G2.CONTROL A11
GND A11 NC B11 Y/G B11 GND B11
PB/B B11 NC A12 GND A12 Y/G B12
GND A12 NC B12 2Y/2G A13 2Y/2G A13
PR/R B12 +12V A13 GND B13 GND B13
SLOT6 A13 TALLY B13 PB/B A14 PB/B A14
SLOT7 B13 +5V A14 GND B14 GND B14
SLOT4 A14 _STANDBY B14 2PB/2B A15 2PB/2B A15
SLOT5 B14 _POWER A15 GND B15 GND B15
SLOT2 A15 _OVERLOAD B15 PR/R A16 PR/R A16
SLOT3 B15 -H.SYNC A16 GND B16 GND B16
SLOT0 A16 _V.SYNC B16 2PR/2R A17 2PR/2R A17
SLOT1 B16 RTS (OPTION) A17 GND B17 GND B17
GND A17 GND B17 _CHAR.BLK A18 CHAR.BLK A18
_CHAR.BLK B17 NC A18 _CHAR.G B18 CHAR.G B18
_CHAR.G A18 RXD (OPTION) B18 _CHAR.B A19 CHAR.B A19
_CHAR.B B18 +5V A19 _CHAR.R B19 CHAR.R B19
_CHAR.R A19 TXD (OPTION) B19 H PULSE A20 AFC.PULSE A20
AFC.PULSE B19 GND A20 _HS B20 HS B20
H SYNC A20 _TXD B20 _VS A21 VS A21
V SYNC B20 RXD A21 _2HS B21 2HS B21
2H SYNC A21 GND B21 _2VS A22 2VS A22
2V SYNC B21 +5V A22 NC22A B22 NC A23
NC A22 GND B22 NC22B A23 NC B23
NC B22 TXD A23 NC23A B23 NC A24
NC A23 _RXD B23 NC23B A24 NC B24
NC B23 GND A24 H PULSE B24 V.BLK1 A25
NC A24 NC B24 V.BLK1 A25 H.BLK B25
V.BLK1 B24 NC A25 H.BLK B25 V.BLK2 B26
H.BLK A25 NC B25 V.BLK2 B26 +5V.SENSE A27
V.BLK2 B25 NC A26 +5V.SENSE A27 RESET B27
NC A26 NC B26 RESET B27 S.PULSE A28
RESET B26 NC A27 S.PULSE A28 MISO B28
S.PULSE A27 NC B27 MISO B28 MOSI A29
MISO B27 NC A28 MOSI A29 SCLK B29
MOSI A28 NC B28 SCLK B29 DIGITAL +5V A30
SCLK B28 NC A29 DIGITAL +5V A30 DIGITAL +5V B30
DIGITAL +5V A29 NC B29 DIGITAL +5V B30 DIGITAL.GND B31
DIGITAL +5V B29 NC A30 DIGITAL.GND B31 CH.SLOT5 B31
DIGITAL.GND A30 NC B30 DIGITAL.GND B32 INTERNAL.SIG A32
DIGITAL.GND B30 NC A31 CH.SLOT5 A32 GND B32
NC A31 NC B31 INTERNAL.SIG B32 GND A32
INT SIG B31 GND A32 GND B32 CH.SLOT3 A31
GND A32 GND B32 GND A32
GND B32 GND B32 GND B32
GND A1
GND B1
+120V A2
+120V B2
GND A3
GND B3
-15V A4
-15V B4
+15V A5
+15V B5
-6V A6
-6V B6
+6V A7
+6V B7
DUG A8
DUB B8
DUR A9
VSP B9
ABL OUT A10
G2.CONTROL B10
AFC.PULSE A11
_HS B11
_VS A12
_2HS B12
_2VS A13
NC22A B13
NC22B A14
NC23A B14
NC23B A15
NC24A B15
V.BLK1 A16
H.BLK B16
V.BLK2 A17
+5V.SENSE B17
RESET A18
NC B18
MISO A19
MOSI B19
DIGITAL +5V A20
DIGITAL +5V B20
DIGITAL +5V A21
DIGITAL +5V B21
DIGITAL.GND A22
DIGITAL.GND B22
DIGITAL.GND A23
DIGITAL.GND B23
_CH.SLOT2 A24
_CH.SLOT1 B24
SCLK A25
INTERNAL.SIG B25
CN4 50P
1
TO TA BOARD CN14
B-SS3280<AEP>-KESSENZU-P2


TA
TO TB BOARD CN4
CN14 50P
TO E BOARD CN801
TO E BOARD CN802
TO G BOARD CN3
CN1.1 64P B TO B
CN1.3 64P B TO B
CN1.2 64P B TO B
CN16 8P WHT
CN508 8P WHT
CN504 4P RED
CN505 4P WHT
CN506 4P BLK
CN507 3P
CN20 3P WHT
CN19 2P WHT
CN18 2P WHT
CN17 4P WHT
CN1.5 11P WHT
TO BK BOARD CN2
TO BK BOARD CN3
TO BK BOARD CN4
TO BK BOARD CN5
LCC
ROT (20INCH ONLY)
NTC
(20INCH ONLY)
J501
CRT SOCKET
CN503 3P
CN502 :TAB
CN501 2P WHT
V901
PICTURE TUBE
CHASSIS
T901
FBT
CN902 11P WHT
CN903 4P WHT
CN901 5P WHT
CN904 2P WHT
P
C
DY
H.DY V.DY
CN007 6P WHT DY
CN902 5P
CN903 3P
CN905 2P
TO TA BOARD CN11
TO TA BOARD CN13
CN801 64P B TO B
CN802 64P B TO B
TO TA BOARD CN12
E
CN3 64P
CN2 7P
CN1 3P
S901
MAIN POWER
DGC
AC IN 100-240V 50/60HZ
G
B-SS3280<AEP>-KESSENZU-P1


BC
CN1 64P B TO B
CN2 64P B TO B
TO TB BOARD CN1
TO TB BOARD CN5
CN3
CN4
CN5
CN6
REMOTE 1 IN
REMOTE 1 OUT
REMOTE 2
ISR
INTERACTIVE STATUS REPORTING
BK
CN1 64P B TO B
TO TB BOARD CN3
CN2 4P RED :S-MICRO
CN3 4P WHT :S-MICRO
CN4 4P BLK :S-MICRO
CN5 5P WHT :S-MICRO
TO C BOARD CN504
TO C BOARD CN505
TO C BOARD CN506
TO C BOARD CN507
TB-1
ANALOG
Y/G IN
Y/G OUT
B-Y BIN
B-Y/B OUT
R-Y/R IN
R-Y/R OUT
SYNC IN
SYNC OUT
B-SS3280<AEP>-KESSENZU-P3


BK SELECT (9/9)
Y/G (8/9, 9/9)
2Y/2G (9/9)
5V
Y CLAMP OFFSET (9/9)
ANALOG
Y/G
B-Y/B
R-Y/R
SYNC
IN
OUT
TB1
G
B
R
PR/R (9/9)
2PR/2R (9/9)
PB/B (9/9)
2PB/2B (9/9)
PROG SW (9/9)
Y CLAMP PULSE (8/9)
C CLAMP PULSE (8/9)
RGB SW (2/9, 9/9)
CONT 0 (9/9)
V BLK1 (9/9)
W B INSERT P (3/9, 7/9)
EXT SYNC (8/9)
MONO (9/9)
R-Y CLAMP OFFSET (9/9)
R-Y PULSE LEVEL (9/9)
B-Y CLAMP OFFSET (9/9)
B-Y PULSE LEVEL (9/9)
WHITE INSERT P (2/9, 7/9)
Y/G OUT (2/9)
PR OUT (2/9)
R OUT (2/9)
B OUT (2/9)
PB OUT (2/9)
WHITE SAMPLING P (3/9, 4/9, 5/9, 6/9, 7/9)
CHROMA (9/9)
BLACK SAMPLING P (2/9, 3/9, 4/9, 5/9, 6/9, 7/9)
Q100 2SA1462 Y/G BUFFER
Q101 DTA144EKA BK SELECT SW
Q102 2SC3545 Y/G BUFFER
Q103 2SA1462 Y/G CLAMP
Q104 2SC3545 Y/G CLAMP
Q105 2SC3545 Y/G CLAMP
IC101 (1/3) MC74HC4053FEL PROGRAM SELECT
IC101 (2/3) MC74HC4053FEL PULSE INSERT
IC101 (3/3) MC74HC4053FEL Y/G CLAMP
IC102 (1/2) TL082CPS Y/G CLAMP
IC102 (2/2) TL082CPS Y/G CLAMP
IC325 TC4W53FU R-Y GAIN CONTROL
IC320 (2/2) TL082CPS R-Y GAIN CONTROL
Q300 2SA1462 R-Y/R BUFFER
Q301 DTA144EKA BK SELECT SW
Q302 2SC3545 R-Y/R BUFFER
Q303 2SA1462 R-Y/R CLAMP
Q304 2SC3545 R-Y/R CLAMP
Q305 2SC3545 R-Y/R CLAMP
IC301 (1/3) MC74HC4053FEL PROGRAM SELECT
IC301 (2/3) MC74HC4053FEL PULSE INSERT
IC301 (3/3) MC74HC4053FEL R-Y/R CLAMP
IC302 (1/2) TL082CPS R-Y/R CLAMP
IC303 CXA1521M R-Y GAIN CONTROL
IC304 (1/3) MC74HC4053FEL RGB SELECT
IC302 (2/2) TL082CPS R-Y/R CLAMP
Q500 2SA1462 B-Y/B BUFFER
Q501 DTA144EKA BK SELECT SW
Q502 2SC3545 B-Y/B BUFFER
Q503 2SA1462 B-Y/B CLAMP
Q504 2SC3545 B-Y/B CLAMP
Q505 2SC3545 B-Y/B CLAMP
IC501 (1/3) MC74HC4053FEL PROGRAM SELECT
IC501 (2/3) MC74HC4053FEL PULSE INSERT
IC501 (3/3) MC74HC4053FEL B-Y/B CLAMP
IC502 (1/2) TL082CPS B-Y/B CLAMP
IC503 CXA1521M B-Y/B GAIN CONTROL
IC504 (1/3) MC74HC4053FEL RGB SELECT
IC502 (2/2) TL082CPS B-Y/B CLAMP
IC520 (1/2) TL082CPS
IC320 (1/2) TL082CPS
IC520 (2/2) TL082CPS B-Y/B GAIN CONTROL
IC525 TC4W53FU B-Y/B GAIN CONTROL
IC500 (2/3) MC74HC4053FEL R-Y REF SELECT
IC300 (1/2) TL082CPS BUFFER
IC500 (3/3) MC74HC4053FEL B-Y REF SELECT
IC300 (2/2) TL082CPS BUFFER
IC500 (1/3) MC74HC4053FEL CLAMP PULSE SELECT
Q902 DTA144EKA SIGNAL OFF SW
IC912 TC7W32FU MONO SW
Q801 2SA1037K EXT SYNC AMP
BK (1/9)
(SIGNAL IN SELECTOR, RGB GAIN CONTROL)
B-SS3280<AEP>-BK. -P1

11-20 11-20

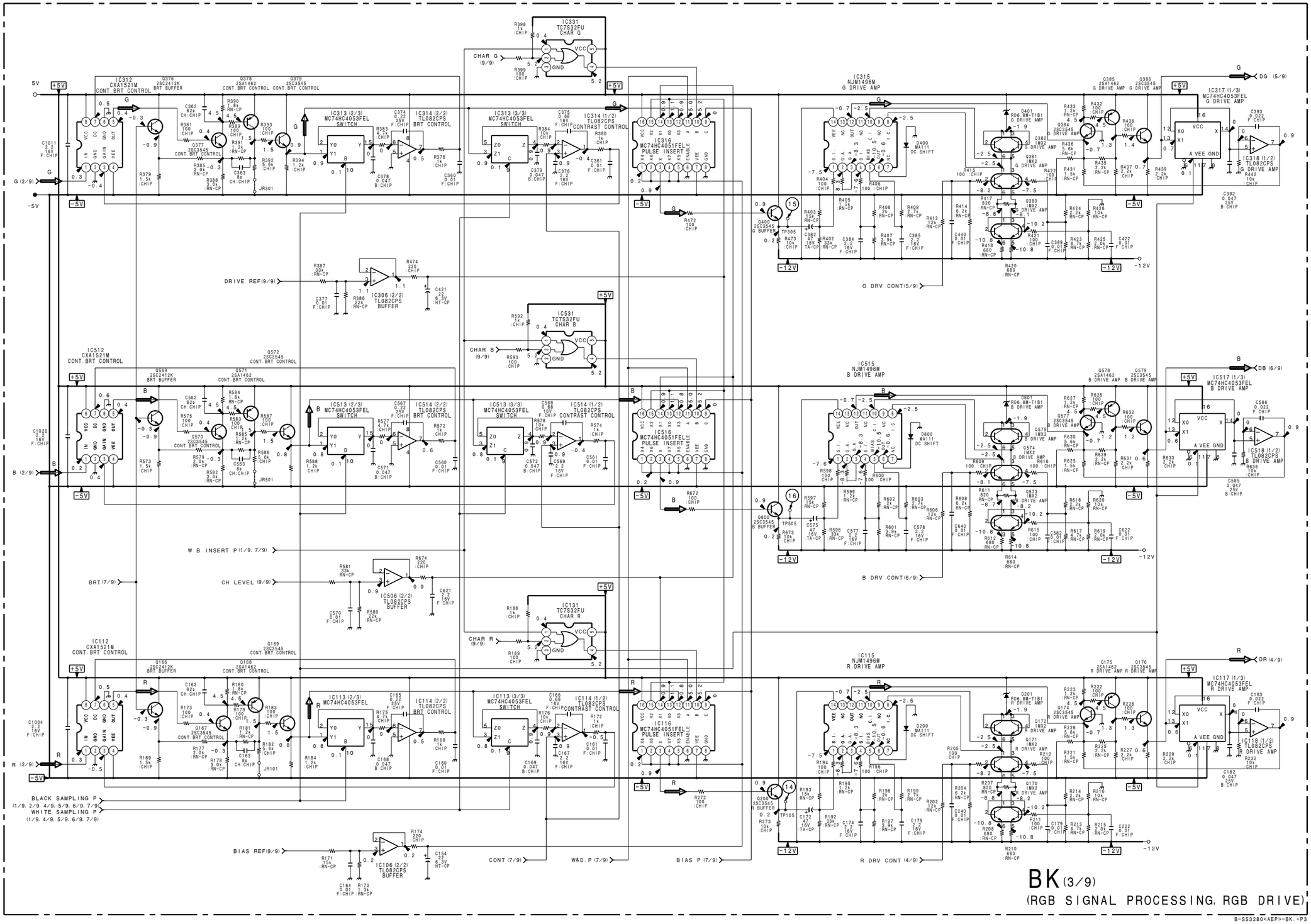


BK (2/9)

(G-Y MATRIX, Y PB/PR MIX
SIGNAL PROCESSOR, BLUE ONLY SW)

B-SS3280<AEP>-BK.-P2

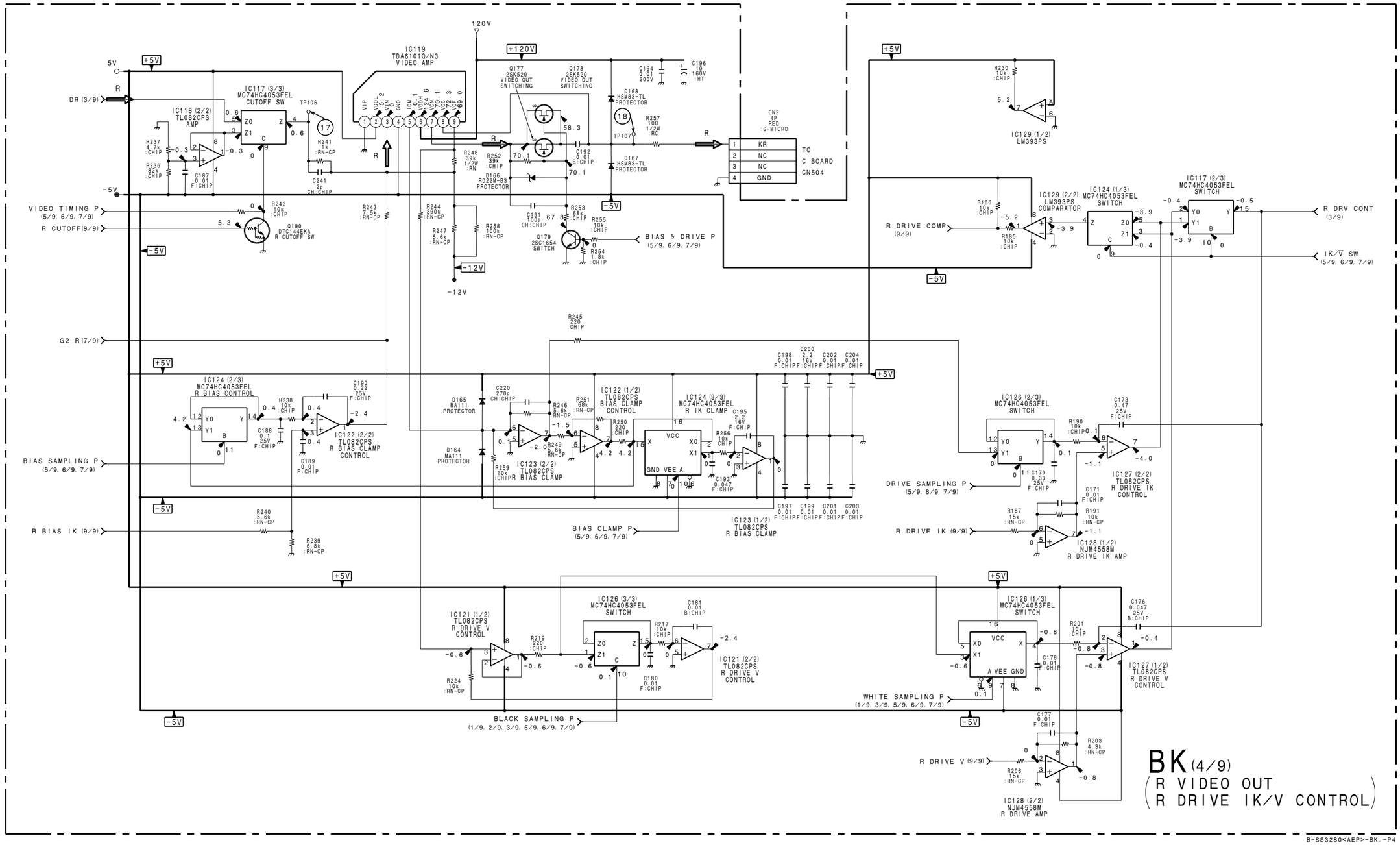
BK (3/9)



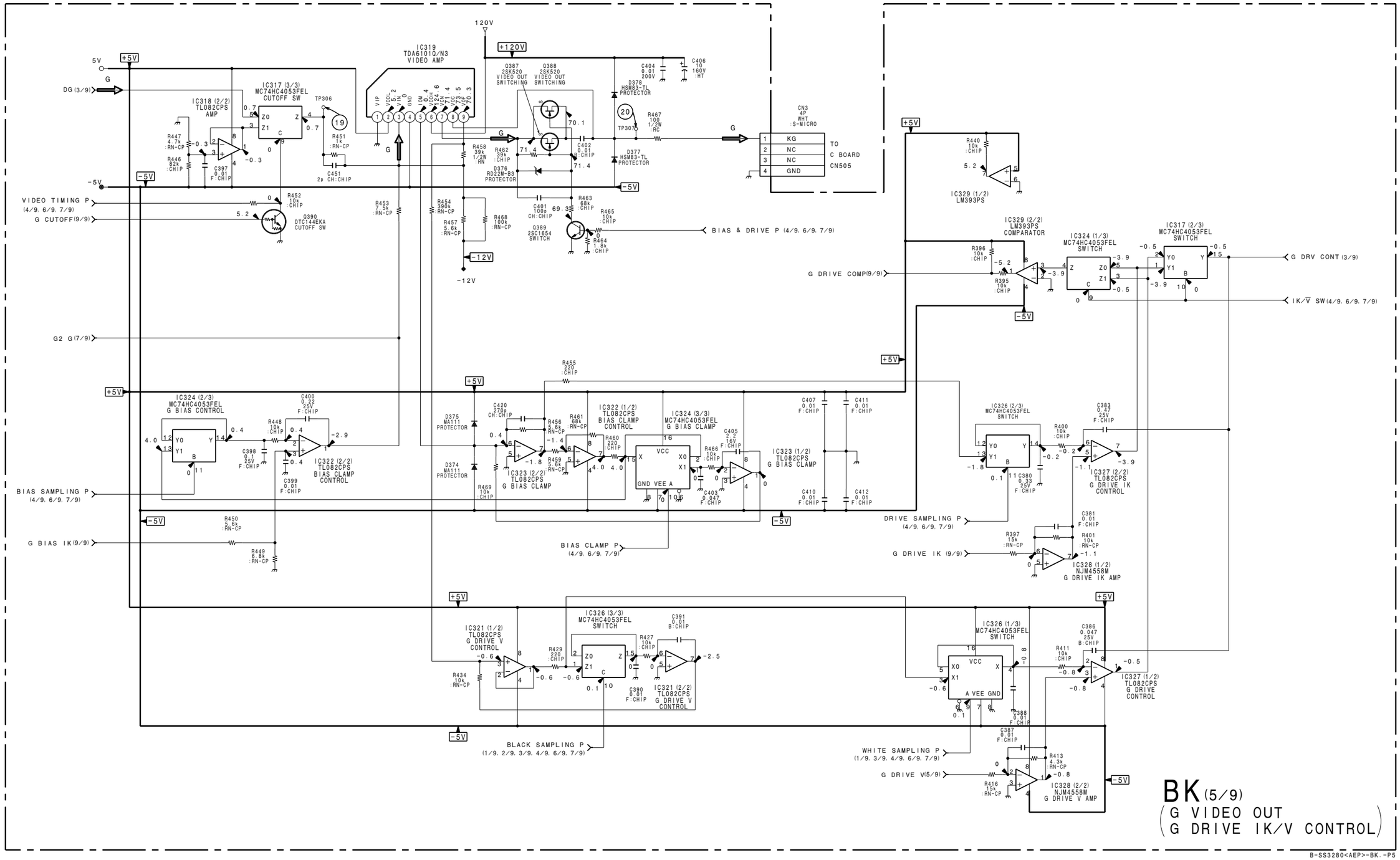
BK (3/9)
(RGB SIGNAL PROCESSING, RGB DRIVE)

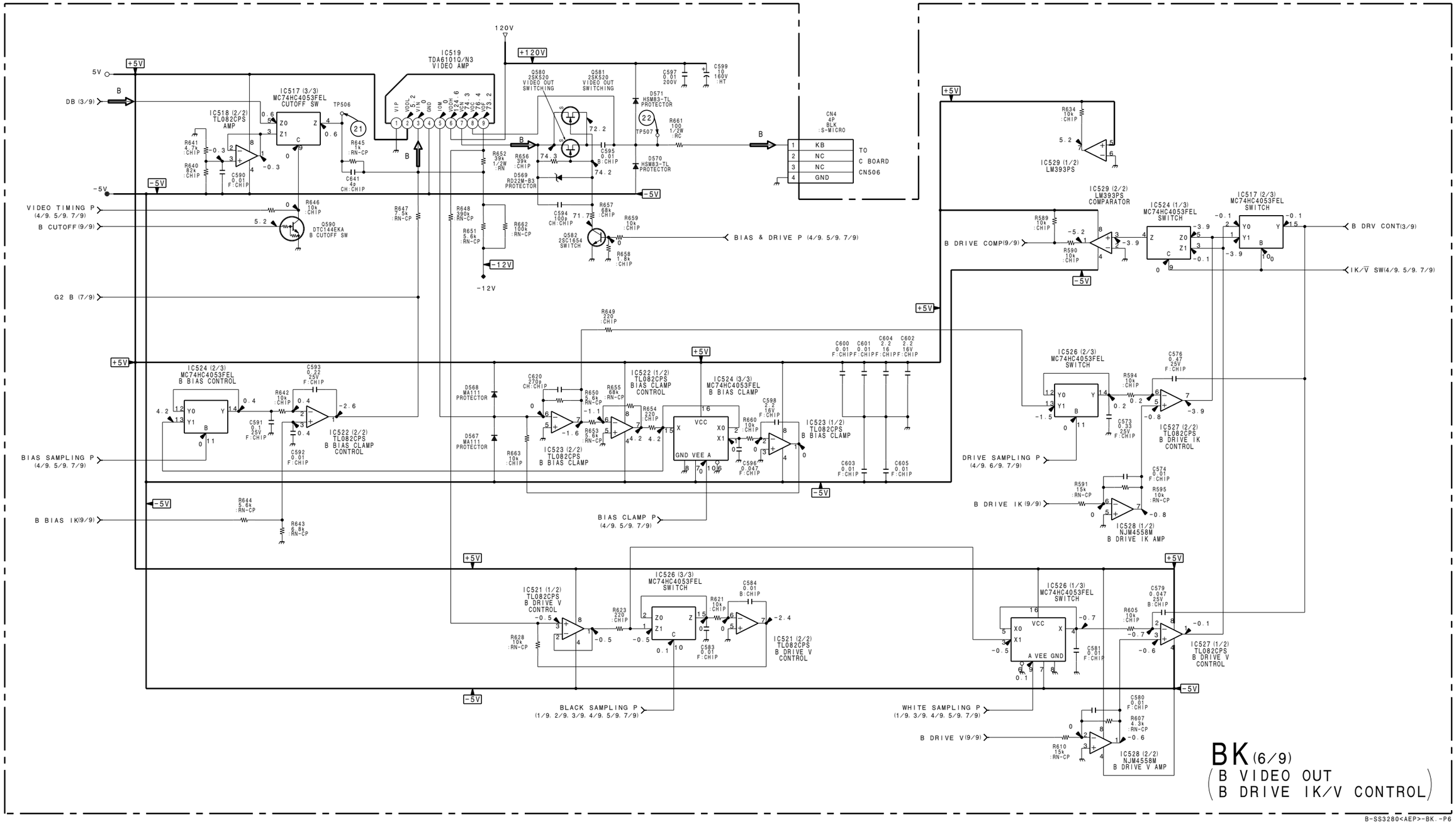
B-SS3280<AEP>-BK.-P3

11-22


IC119 TDA6101Q/N3 VIDEO AMP
IC117 (3/3) MC74HC4053FEL CUTOFF SW
IC118 (2/2) TL082CPS AMP
IC124 (2/3) MC74HC4053FEL R BIAS CONTROL
IC122 (2/2) TL082CPS R BIAS CLAMP CONTROL
IC123 (2/2) TL082CPS R BIAS CLAMP
IC124 (3/3) MC74HC4053FEL R IK CLAMP
IC121 (1/2) TL082CPS R DRIVE V CONTROL
IC126 (3/3) MC74HC4053FEL SWITCH
IC121 (2/2) TL082CPS R DRIVE V CONTROL
IC129 (1/2) LM393PS
IC129 (2/2) LM393PS COMPARATOR
IC124 (1/3) MC74HC4053FEL SWITCH
IC117 (2/3) MC74HC4053FEL SWITCH
IC126 (2/3) MC74HC4053FEL SWITCH
IC127 (2/2) TL082CPS R DRIVE IK CONTROL
IC128 (1/2) NJM4558M R DRIVE IK AMP
IC126 (1/3) MC74HC4053FEL SWITCH
IC127 (1/2) TL082CPS R DRIVE V CONTROL
IC128 (2/2) NJM4558M R DRIVE AMP
Q177 2SK520 VIDEO OUT SWITCHING
Q178 2SK520 VIDEO OUT SWITCHING
Q179 2SC1654 SWITCH
Q190 DTC144EKA R CUTOFF SW
D165 MA111 PROTECTOR
D164 MA111 PROTECTOR
D168 HSM83-TL PROTECTOR
D167 HSM83-TL PROTECTOR
D166 RD22M-B3 PROTECTOR
CN2 4P RED :S-MICRO
TO C BOARD CN504
KR
NC
NC
GND
120V
+120V
+5V
-5V
-12V
VIDEO TIMING P (5/9, 6/9, 7/9)
R CUTOFF(9/9)
G2 R(7/9)
BIAS SAMPLING P (5/9, 6/9, 7/9)
R BIAS IK (9/9)
BIAS & DRIVE P (5/9, 6/9, 7/9)
BIAS CLAMP P (5/9, 6/9, 7/9)
BLACK SAMPLING P (1/9, 2/9, 3/9, 5/9, 6/9, 7/9)
R DRIVE COMP (9/9)
DRIVE SAMPLING P (5/9, 6/9, 7/9)
WHITE SAMPLING P (1/9, 3/9, 5/9, 6/9, 7/9)
R DRIVE IK (9/9)
R DRIVE V (9/9)
R DRV CONT (3/9)
IK/V SW (5/9, 6/9, 7/9)
B-SS3280<AEP>-BK.-P4

BK (4/9)
(R VIDEO OUT R DRIVE IK/V CONTROL)


IC319 TDA6101Q/N3 VIDEO AMP
IC317 (3/3) MC74HC4053FEL CUTOFF SW
IC318 (2/2) TL082CPS AMP
Q387 2SK520 VIDEO OUT SWITCHING
Q388 2SK520 VIDEO OUT SWITCHING
D378 HSM83-TL PROTECTOR
D377 HSM83-TL PROTECTOR
D376 RD22M-B3 PROTECTOR
CN3 4P WHT :S-MICRO
KG
NC
NC
GND
TO C BOARD CN505
VIDEO TIMING P (4/9, 6/9, 7/9)
G CUTOFF(9/9)
D390 DTC144EKA CUTOFF SW
BIAS & DRIVE P (4/9, 6/9, 7/9)
G DRIVE COMP(9/9)
IC329 (1/2) LM393PS
IC329 (2/2) LM393PS COMPARATOR
IC324 (1/3) MC74HC4053FEL SWITCH
IC317 (2/3) MC74HC4053FEL SWITCH
G DRV CONT (3/9)
IK/V SW(4/9, 6/9, 7/9)
G2 G(7/9)
IC324 (2/3) MC74HC4053FEL G BIAS CONTROL
IC322 (2/2) TL082CPS BIAS CLAMP CONTROL
IC322 (1/2) TL082CPS BIAS CLAMP CONTROL
IC324 (3/3) MC74HC4053FEL G BIAS CLAMP
IC323 (2/2) TL082CPS G BIAS CLAMP
IC323 (1/2) TL082CPS G BIAS CLAMP
IC326 (2/3) MC74HC4053FEL SWITCH
IC327 (2/2) TL082CPS G DRIVE IK CONTROL
IC328 (1/2) NJM4558M G DRIVE IK AMP
BIAS SAMPLING P (4/9, 6/9, 7/9)
G BIAS IK(9/9)
BIAS CLAMP P (4/9, 6/9, 7/9)
DRIVE SAMPLING P (4/9, 6/9, 7/9)
G DRIVE IK (9/9)
IC321 (1/2) TL082CPS G DRIVE V CONTROL
IC326 (3/3) MC74HC4053FEL SWITCH
IC321 (2/2) TL082CPS G DRIVE V CONTROL
IC326 (1/3) MC74HC4053FEL SWITCH
IC327 (1/2) TL082CPS G DRIVE CONTROL
BLACK SAMPLING P (1/9, 2/9, 3/9, 4/9, 6/9, 7/9)
WHITE SAMPLING P (1/9, 3/9, 4/9, 6/9, 7/9)
G DRIVE V(5/9)
IC328 (2/2) NJM4558M G DRIVE V AMP
BK (5/9)
G VIDEO OUT
G DRIVE IK/V CONTROL
B-SS3280<AEP>-BK.-P5

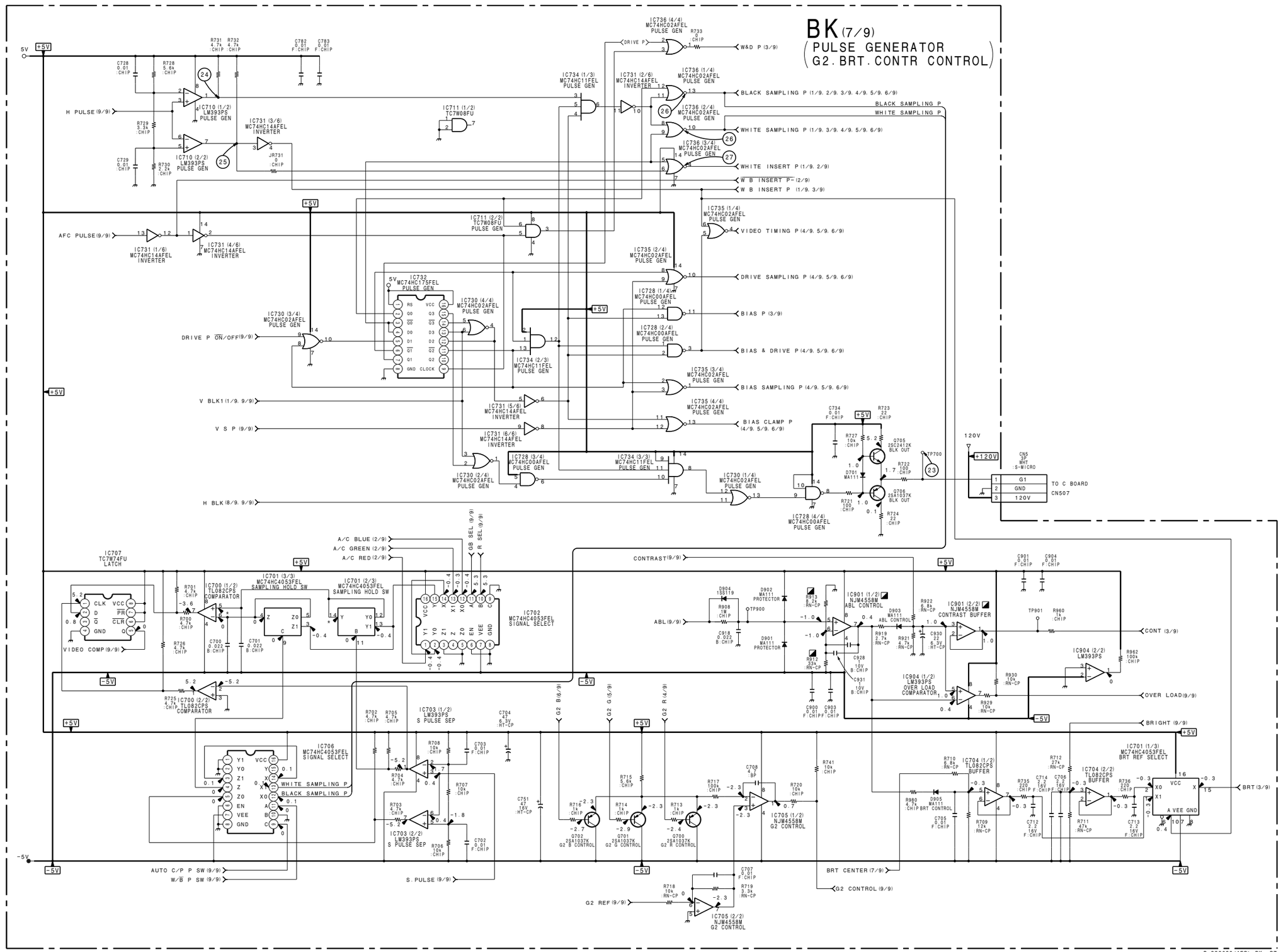


BK (6/9)
(B VIDEO OUT
B DRIVE IK/V CONTROL)

B-SS3280<AEP>-BK.-P6

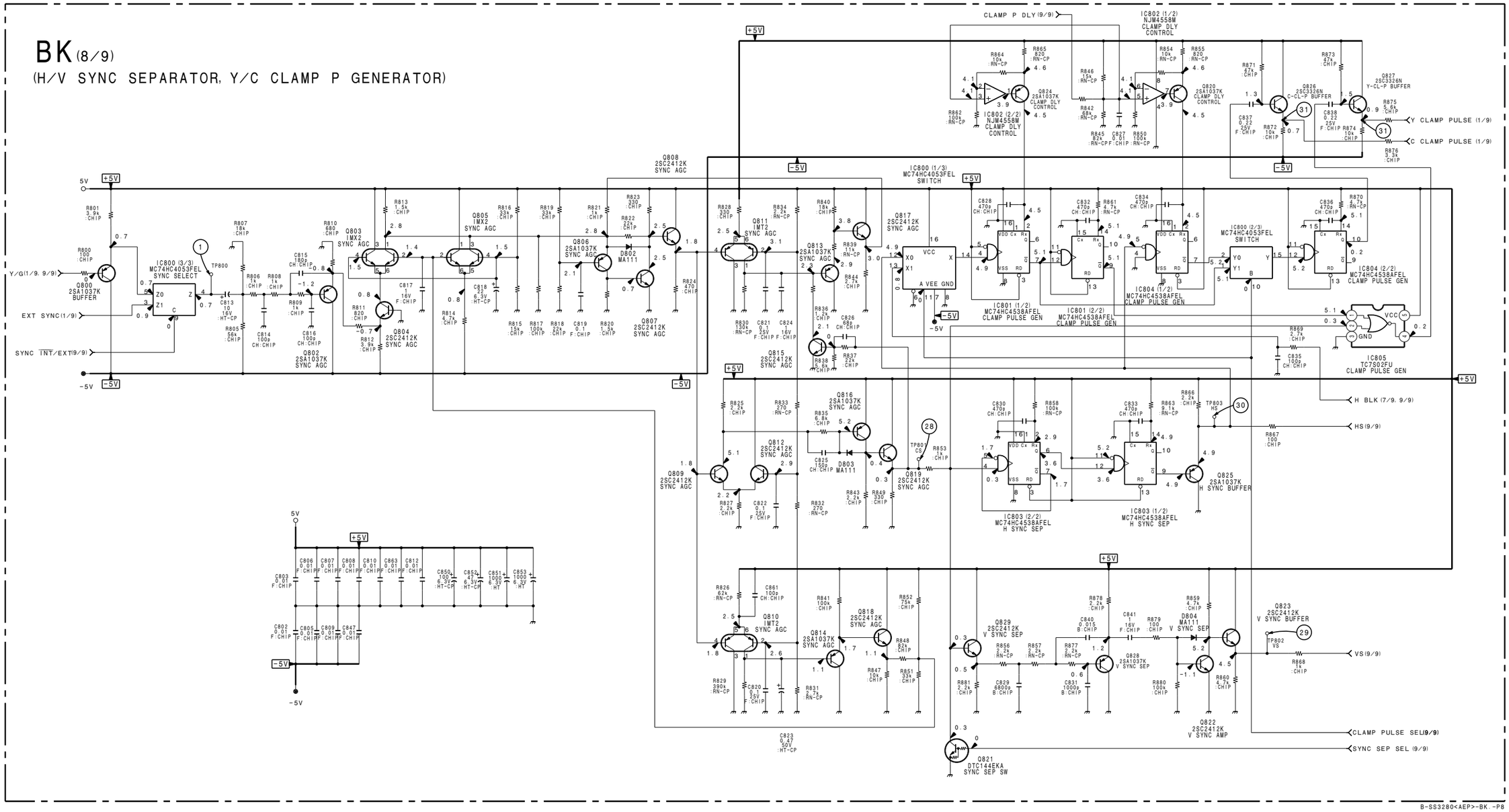
11-25 11-25

A B C D E F G H


BK (7/9)
PULSE GENERATOR
G2. BRT. CONTR CONTROL
H PULSE (9/9)
AFC PULSE (9/9)
V BLK1 (1/9, 9/9)
V S P (9/9)
H BLK (8/9, 9/9)
DRIVE P ON/OFF (9/9)
VIDEO COMP (9/9)
A/C BLUE (2/9)
A/C GREEN (2/9)
A/C RED (2/9)
G B SEL (9/9)
R SEL (9/9)
AUTO C/P P SW (9/9)
W/B P SW (9/9)
S. PULSE (9/9)
G2 REF (9/9)
ABL (9/9)
CONTRAST (9/9)
BRT CENTER (7/9)
G2 CONTROL (9/9)
W&D P (3/9)
BLACK SAMPLING P (1/9, 2/9, 3/9, 4/9, 5/9, 6/9)
WHITE SAMPLING P (1/9, 3/9, 4/9, 5/9, 6/9)
WHITE INSERT P (1/9, 2/9)
W B INSERT P– (2/9)
W B INSERT P (1/9, 3/9)
VIDEO TIMING P (4/9, 5/9, 6/9)
DRIVE SAMPLING P (4/9, 5/9, 6/9)
BIAS P (3/9)
BIAS & DRIVE P (4/9, 5/9, 6/9)
BIAS SAMPLING P (4/9, 5/9, 6/9)
BIAS CLAMP P (4/9, 5/9, 6/9)
120V
TO C BOARD CN507
CONT (3/9)
OVER LOAD (9/9)
BRIGHT (9/9)
BRT (3/9)
IC710 (1/2) LM393PS PULSE GEN
IC710 (2/2) LM393PS PULSE GEN
IC731 (1/6) MC74HC14AFEL INVERTER
IC731 (2/6) MC74HC14AFEL INVERTER
IC731 (3/6) MC74HC14AFEL INVERTER
IC731 (4/6) MC74HC14AFEL INVERTER
IC731 (5/6) MC74HC14AFEL INVERTER
IC731 (6/6) MC74HC14AFEL INVERTER
IC732 MC74HC175FEL PULSE GEN
IC734 (1/3) MC74HC11FEL PULSE GEN
IC734 (2/3) MC74HC11FEL PULSE GEN
IC734 (3/3) MC74HC11FEL PULSE GEN
IC735 (1/4) MC74HC02AFEL PULSE GEN
IC735 (2/4) MC74HC02AFEL PULSE GEN
IC735 (3/4) MC74HC02AFEL PULSE GEN
IC735 (4/4) MC74HC02AFEL PULSE GEN
IC736 (1/4) MC74HC02AFEL PULSE GEN
IC736 (2/4) MC74HC02AFEL PULSE GEN
IC736 (3/4) MC74HC02AFEL PULSE GEN
IC736 (4/4) MC74HC02AFEL PULSE GEN
IC730 (1/4) MC74HC02AFEL PULSE GEN
IC730 (2/4) MC74HC02AFEL PULSE GEN
IC730 (3/4) MC74HC02AFEL PULSE GEN
IC730 (4/4) MC74HC02AFEL PULSE GEN
IC728 (1/4) MC74HC00AFEL PULSE GEN
IC728 (2/4) MC74HC00AFEL PULSE GEN
IC728 (3/4) MC74HC00AFEL PULSE GEN
IC728 (4/4) MC74HC00AFEL PULSE GEN
IC711 (1/2) TC7W08FU
IC711 (2/2) TC7W08FU PULSE GEN
IC707 TC7W74FU LATCH
IC701 (3/3) MC74HC4053FEL SAMPLING HOLD SW
IC701 (2/3) MC74HC4053FEL SAMPLING HOLD SW
IC702 MC74HC4053FEL SIGNAL SELECT
IC706 MC74HC4053FEL SIGNAL SELECT
IC700 (1/2) TL082CPS COMPARATOR
IC700 (2/2) TL082CPS COMPARATOR
IC703 (1/2) LM393PS S PULSE SEP
IC703 (2/2) LM393PS S PULSE SEP
IC705 (1/2) NJM4558M G2 CONTROL
IC705 (2/2) NJM4558M G2 CONTROL
IC901 (1/2) NJM4558M ABL CONTROL
IC901 (2/2) NJM4558M CONTRAST BUFFER
IC904 (1/2) LM393PS OVER LOAD COMPARATOR
IC904 (2/2) LM393PS
IC704 (1/2) TL082CPS BUFFER
IC704 (2/2) TL082CPS BUFFER
IC701 (1/3) MC74HC4053FEL BRT REF SELECT
Q705 2SC2412K BLK OUT
Q706 2SA1037K BLK OUT
Q701 2SA1037K G2 B CONTROL
Q702 2SA1037K G2 R CONTROL
Q700 2SA1037K G2 R CONTROL
D701 MA111
D902 MA111 PROTECTOR
D901 MA111 PROTECTOR
D903 MA111 ABL CONTROL
D905 MA111 BRT CONTROL
D904 1SS119
TP700
TP900
TP901
CN5 3P WHT S-MICRO
B-SS3280<AEP>-BK. -P7

BK (8/9)

(H/V SYNC SEPARATOR, Y/C CLAMP P GENERATOR)


CLAMP P DLY (9/9)
IC802 (1/2) NJM4558M CLAMP DLY CONTROL
IC802 (2/2) NJM4558M CLAMP DLY CONTROL
Q824 2SA1037K CLAMP DLY CONTROL
Q820 2SA1037K CLAMP DLY CONTROL
Q826 2SC3326N C-CL-P BUFFER
Q827 2SC3326N Y-CL-P BUFFER
Y CLAMP PULSE (1/9)
C CLAMP PULSE (1/9)
+5V
-5V
5V
IC800 (3/3) MC74HC4053FEL SYNC SELECT
IC800 (1/3) MC74HC4053FEL SWITCH
IC800 (2/3) MC74HC4053FEL SWITCH
Y/G(1/9, 9/9)
EXT SYNC(1/9)
SYNC INT/EXT(9/9)
Q809 2SA1037K BUFFER
Q803 IMX2 SYNC AGC
Q805 IMX2 SYNC AGC
Q806 2SA1037K SYNC AGC
Q807 2SC2412K SYNC AGC
Q802 2SA1037K SYNC AGC
Q804 2SC2412K SYNC AGC
D802 MA111
Q808 2SC2412K SYNC AGC
Q811 IMT2 SYNC AGC
Q813 2SA1037K SYNC AGC
Q817 2SC2412K SYNC AGC
Q815 2SC2412K SYNC AGC
Q816 2SA1037K SYNC AGC
Q812 2SC2412K SYNC AGC
Q809 2SC2412K SYNC AGC
Q819 2SC2412K SYNC AGC
D803 MA111
IC801 (1/2) MC74HC4538AFEL CLAMP PULSE GEN
IC801 (2/2) MC74HC4538AFEL CLAMP PULSE GEN
IC804 (1/2) MC74HC4538AFEL CLAMP PULSE GEN
IC804 (2/2) MC74HC4538AFEL CLAMP PULSE GEN
IC805 TC7S02FU CLAMP PULSE GEN
IC803 (1/2) MC74HC4538AFEL H SYNC SEP
IC803 (2/2) MC74HC4538AFEL H SYNC SEP
Q825 2SA1037K H SYNC BUFFER
H BLK (7/9, 9/9)
HS(9/9)
Q810 IMT2 SYNC AGC
Q814 2SA1037K SYNC AGC
Q818 2SC2412K SYNC AGC
Q829 2SC2412K V SYNC SEP
Q828 2SA1037K V SYNC SEP
D804 MA111 V SYNC SEP
Q823 2SC2412K V SYNC BUFFER
Q822 2SC2412K V SYNC AMP
Q821 DTC144EKA SYNC SEP SW
VS(9/9)
CLAMP PULSE SEL(9/9)
SYNC SEP SEL (9/9)

B-SS3280<AEP>-BK.-P8

A B C D E F G H

BK (9/9)

(SYSTEM CONTROL, D/A CONVERTER)

BK Board Waveforms (1/2)

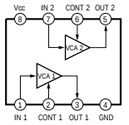
① 2.2Vp-p (H)	② 2.3Vp-p (H)	③ 2.3Vp-p (H)
④ 1.8Vp-p (H)	⑤ 990mVp-p (H)	⑥ 2.8Vp-p (H)
⑦ 3.1Vp-p (H)	⑧ 2.0Vp-p (H)	⑨ 2.8Vp-p (H)
⑩ 3.2Vp-p (H)	⑪ 2.7Vp-p (H)	⑫ 2.8Vp-p (H)
⑬ 3.1Vp-p (H)	⑭ 3Vp-p (H)	⑮ 3Vp-p (H)
⑯ 3.1Vp-p (H)	⑰ 2.2Vp-p (H)	⑱ 76Vp-p (H)
⑲ 2.3Vp-p (H)	⑳ 75Vp-p (H)	㉑ 1.9Vp-p (H)
㉒ 69Vp-p (H)	㉓ 4.7Vp-p (H)	㉔ 5.2Vp-p (H)
㉕ 5Vp-p (H)	㉖ 128µsec 5Vp-p	㉗ 63.5µsec 5Vp-p
㉘ 4.2Vp-p (H)	㉙ 4.2Vp-p (V)	㉚ 4.3Vp-p (H)

BK Board Waveforms (2/2)

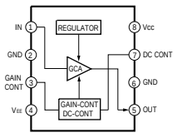
㉛ 4.6Vp-p (H)	㉜ 5.7Vp-p (8MHz)	㉝ 4.2Vp-p (H)
㉞ 4.2Vp-p (V)	㉟ 4.1Vp-p (H)	㊱ 5.1Vp-p (V)
㊲ 5Vp-p (H)		

BK Board IC Block Diagrams

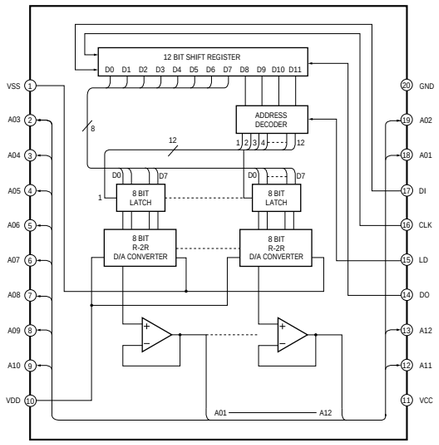
CXA1211M (IC305)



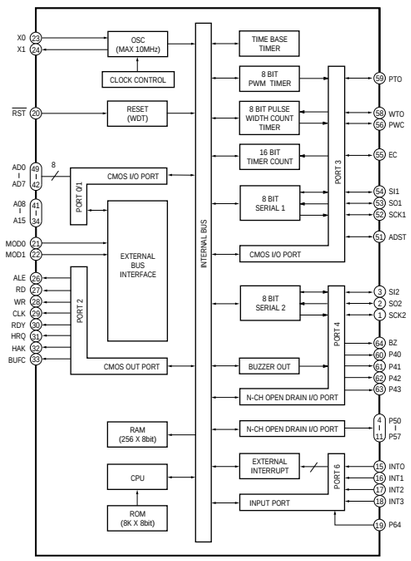
CXA1521M (IC112, 303, 312, 503, 512)



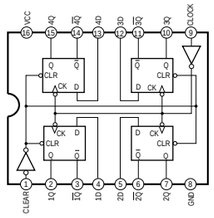
MB88346BPFV (IC906-911)



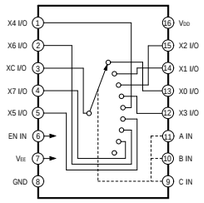
MB89613R-236/438 (IC902)



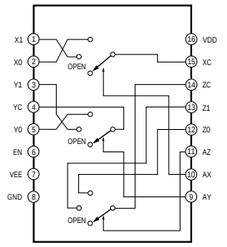
MC74HC175FEL (IC732)



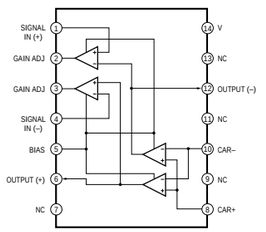
MC74HC4051F (IC116, 316, 516)



MC74HC4053F (IC101, 104, 110, 113, 117, 124, 126, 301, 304, 310, 313, 317, 324, 326, 500, 501, 504, 510, 513, 517, 524, 526, 701, 702, 706, 800)

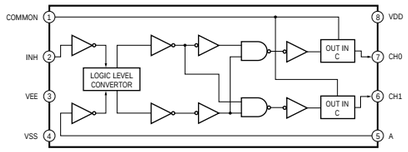


NJM1496M (IC115, 315, 515)

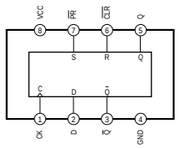


11-29

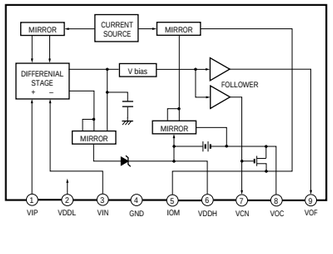
TC4W53FU (IC107, 307, 325, 507, 508, 525)



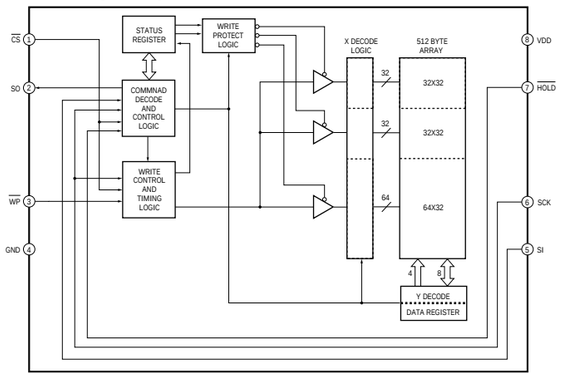
TC7W74FU (IC707)



TDA6101Q/N3 (IC119, 319, 519)



X25040SI (IC903)



BC (1/4)

MICROCOMPUTER
PROGRAM, S-RAM
ADDRESS SELECTOR
PARALLEL I/O
CHRACTER GEN

IC1 HD6475368CP-10 E62 0 MICROCOMPUTER

IC2 MM1026BFB RESET

IC3 CAT28F020P-15 PROGRAM

IC4 CXK58257CM -70LL-T6 SRAM

IC5 CXD1095Q PARALLEL I/O

IC6 CXD1095Q PARALLEL I/O

IC7 μPD6453GT-101-E1 CHARACTER GEN

IC9 (1/2) TC7W32FU (TE12R) SRAM ENABLE

IC10 TC74VHC138F (EL) ADDRESS SELECTOR

IC13 TC74VHC138F (EL) ADDRESS SELECTOR

IC125 (6/6) SN74HC05ANS INVERTER

IC15 (4/6) TC74VHCU04F (EL) INVERTER

IC15 (5/6) TC74VHCU04F (EL) INVERTER

IC15 (6/6) TC74VHCU04F (EL) INVERTER

IC8 (6/6) SN74HC05ANS-E05 INVERTER

IC8 (1/6) SN74HC05ANS-E05 INVERTER

IC12 (3/4) TC74VHC125F (EL) INT BUS DRIVER

IC12 (1/4) TC74VHC125F (EL) INT BUS DRIVER

IC12 (2/4) TC74VHC125F (EL) INT BUS DRIVER

IC125 (4/6) SN74HC05ANS INVERTER

IC15 (2/6) TC74VHCU04F (EL) INVERTER

IC15 (3/6) TC74VHCU04F (EL) INVERTER

IC12 (4/4) TC74VHC125F (EL) INT BUS DRIVER

IC9 (2/2) TC7W32FU (TE12R) SRAM ENABLE

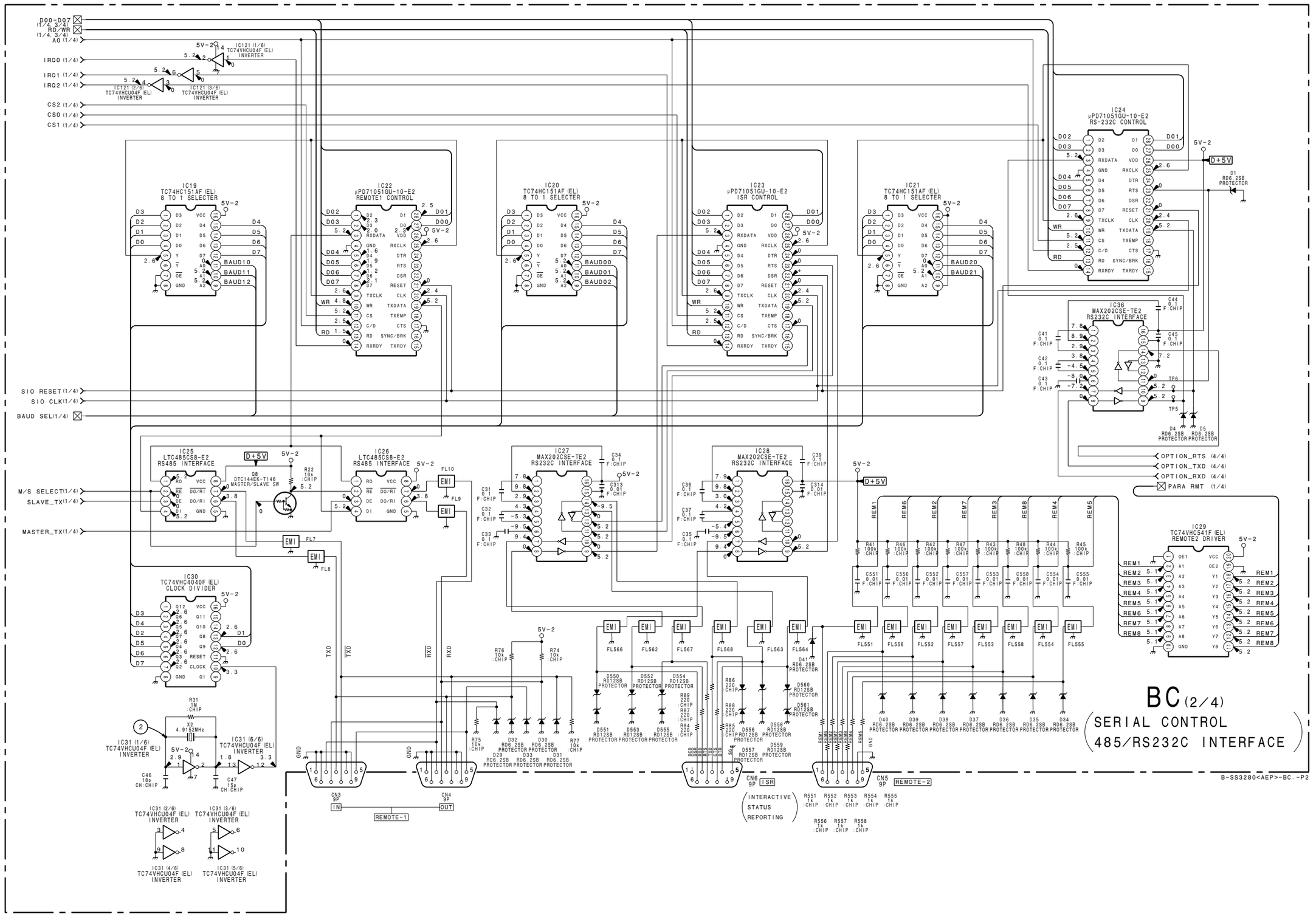
IC15 (1/6) TC74VHCU04F (EL) INVERTER

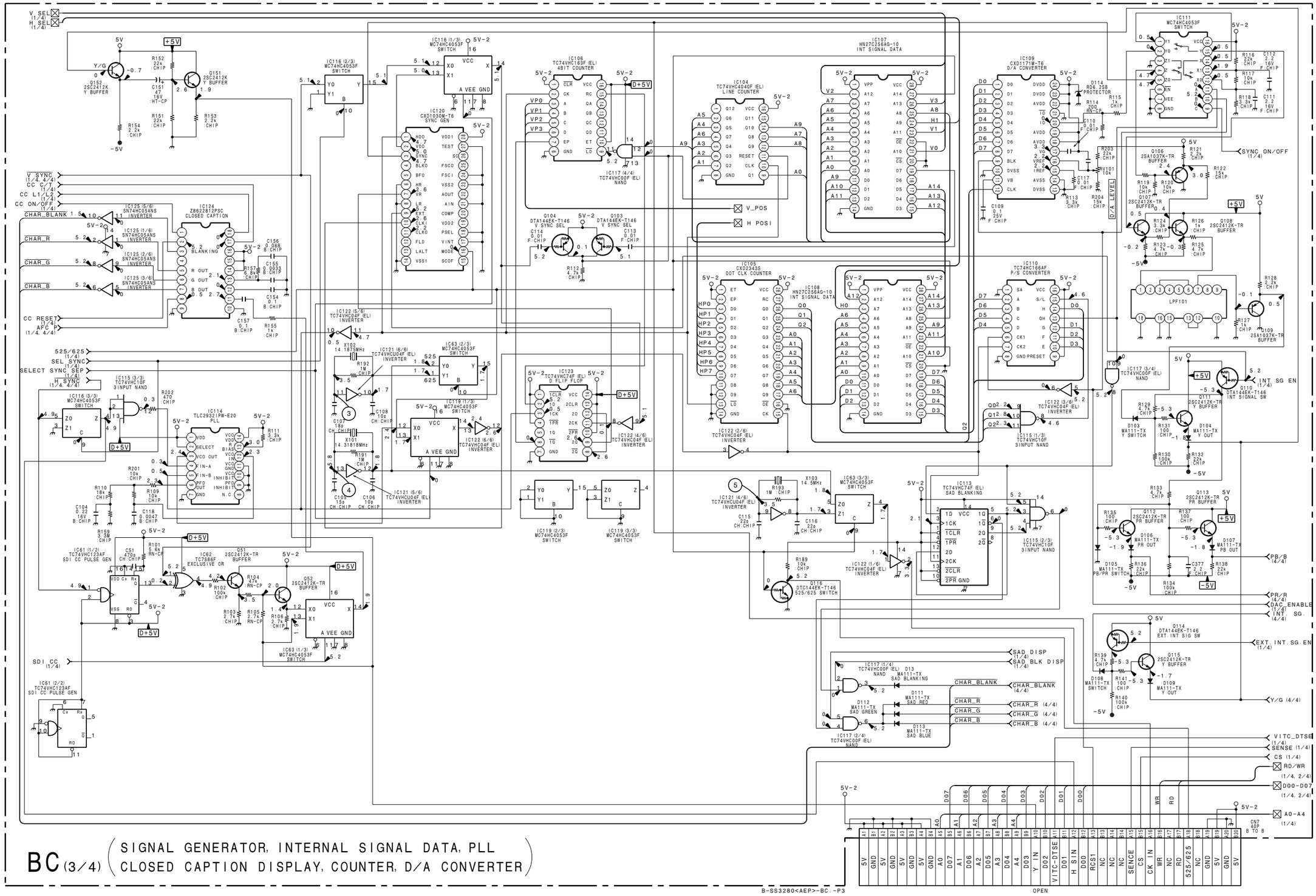
Q1 DTC144EK-T146 CHARA GEN RESET
Q2 DTA144EK-T146 SLAVE CPU RESET
Q3 DTA144EK-T146 SIO RESET
Q4 DTC144EK-T146 +5V SW
Q5 DTC144EK-T146 +12V SW
Q6 2SA1221-T-KLM +5V DRIVER
Q7 2SA1221-T-KLM +12V DRIVER
Q10 DTC144EK-T146 CC RESET

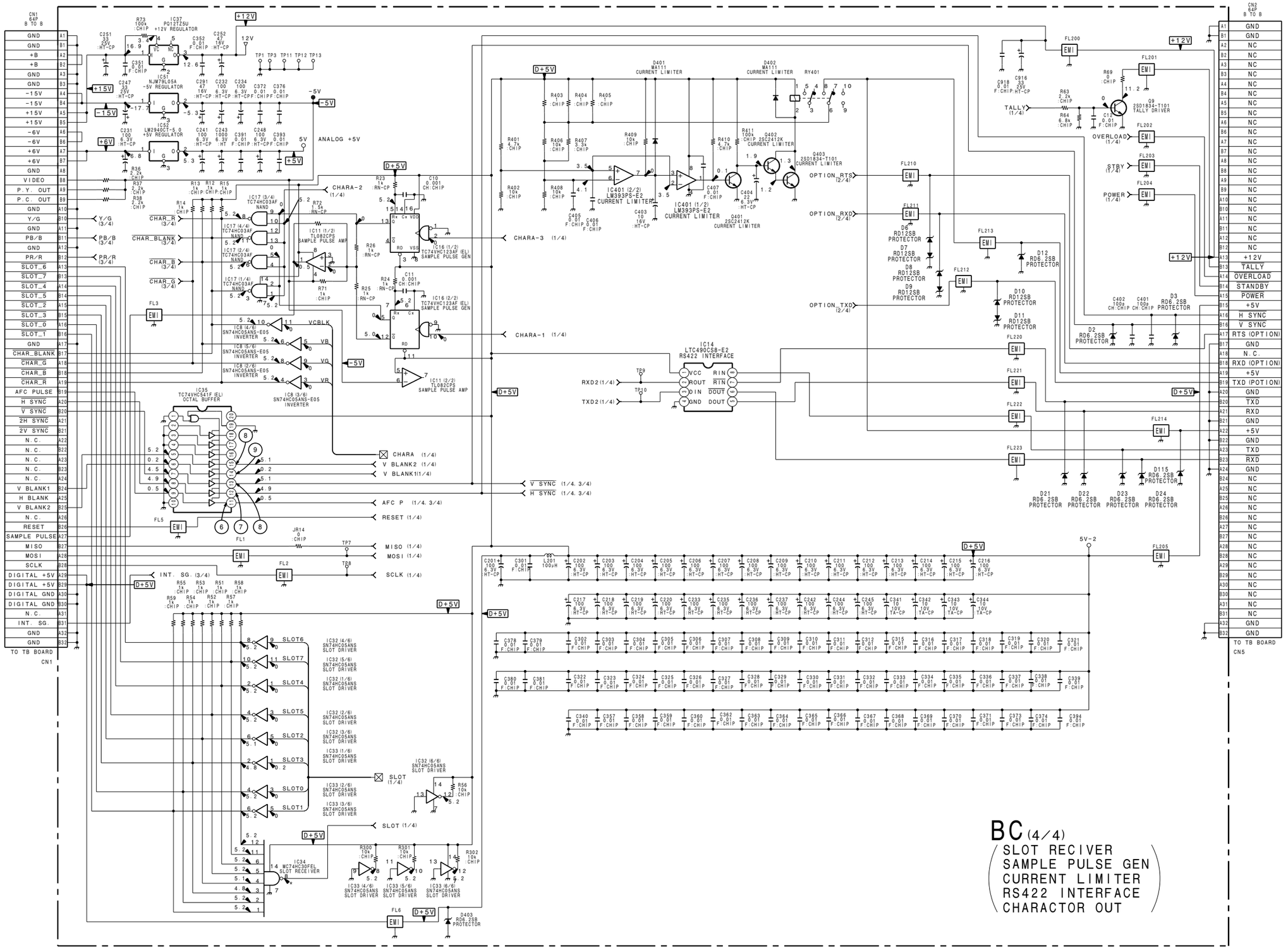
RD/WR (2/4, 3/4)
D00-D07 (2/4, 3/4)
A0-A4 (3/4) A0 (2/4)
H SYNC (3/4, 4/4)
V SYNC (3/4, 4/4)
CHARA-3 (4/4)
CHARA-2 (4/4)
CHARA-1 (4/4)
IRQ2 (2/4)
IRQ0 (2/4)
IRQ1 (2/4)
M/S SELECT (2/4)
TXD2 (4/4)
RXD2 (4/4)
V BLANK2 (4/4)
V BLANK1 (4/4)
AFC P (3/4, 4/4)
MISO (4/4)
MOSI (4/4)
SCLK (4/4)
CHARA (4/4)
RESET (4/4)
SLOT (4/4)
SLOT (4/4)

CC RESET (3/4)
SIO RESET (2/4)
VITC_DTSE (3/4)
SIO CLK (3/4)
BATS! LITHIUM BATTERY
CS0 (2/4)
CS1 (2/4)
CS2 (2/4)
CS (3/4)
BAUD SEL (2/4)
PARA RMT (2/4)
H POSI (3/4)
DAC_ENABLE (3/4)
525/625 (3/4)
H SEL (3/4)
V SEL (3/4)
V_POS (3/4)
SENSE (3/4)
TALLY (4/4)
STBY (4/4)
POWER (4/4)
OVERLOAD (4/4)
SELECT SYNC SEP (3/4)
SEL_SYNC (3/4)
SAD_BLK DISP (3/4)
SAD_DISP (3/4)
SDI CC (3/4)
CC ON/OFF (3/4)
CC C/T (3/4)
CC L1/L2 (3/4)
INT SG EN (3/4)
SYNC ON/OFF (3/4)
EXT INT.SG.EN (3/4)
SLAVE_TX (2/4)
MASTER_TX (2/4)

B-SS3280<AEP>-BC.-P1


D00-D07 (1/4, 3/4)
RD/WR (1/4, 3/4)
A0 (1/4)
IRQ0 (1/4)
IRQ1 (1/4)
IRQ2 (1/4)
CS2 (1/4)
CS0 (1/4)
CS1 (1/4)
SIO RESET(1/4)
SIO CLK(1/4)
BAUD SEL(1/4)
M/S SELECT(1/4)
SLAVE_TX(1/4)
MASTER_TX(1/4)
IC19 TC74HC151AF (EL) 8 TO 1 SELECTER
IC20 TC74HC151AF (EL) 8 TO 1 SELECTER
IC21 TC74HC151AF (EL) 8 TO 1 SELECTER
IC22 µPD71051GU-10-E2 REMOTE1 CONTROL
IC23 µPD71051GU-10-E2 ISR CONTROL
IC24 µPD71051GU-10-E2 RS-232C CONTROL
IC25 LTC485CS8-E2 RS485 INTERFACE
IC26 LTC485CS8-E2 RS485 INTERFACE
IC27 MAX202CSE-TE2 RS232C INTERFACE
IC28 MAX202CSE-TE2 RS232C INTERFACE
IC29 TC74VHC541F (EL) REMOTE2 DRIVER
IC30 TC74VHC4040F (EL) CLOCK DIVIDER
IC31 (1/6) TC74VHCU04F (EL) INVERTER
IC31 (2/6) TC74VHCU04F (EL) INVERTER
IC31 (3/6) TC74VHCU04F (EL) INVERTER
IC31 (4/6) TC74VHCU04F (EL) INVERTER
IC31 (5/6) TC74VHCU04F (EL) INVERTER
IC31 (6/6) TC74VHCU04F (EL) INVERTER
IC36 MAX202CSE-TE2 RS232C INTERFACE
Q8 DTC144EK-T146 MASTER/SLAVE SW
X2 4.9152MHz
CN3 9P IN REMOTE-1
CN4 9P OUT
CN6 9P ISR
CN5 9P REMOTE-2
INTERACTIVE STATUS REPORTING
OPTION_RTS (4/4)
OPTION_TXD (4/4)
OPTION_RXD (4/4)
PARA RMT (1/4)
D+5V
5V-2
BAUD00
BAUD01
BAUD02
BAUD10
BAUD11
BAUD12
BAUD20
BAUD21
TXD
RXD
REM1
REM2
REM3
REM4
REM5
REM6
REM7
REM8
BC (2/4)
SERIAL CONTROL
485/RS232C INTERFACE
B-SS3280<AEP>-BC.-P2


BC (3/4) (SIGNAL GENERATOR, INTERNAL SIGNAL DATA, PLL
CLOSED CAPTION DISPLAY, COUNTER, D/A CONVERTER)
B-SS3280<AEP>-BC. -P3
OPEN
V_POS
H POSI
SYNC ON/OFF (1/4)
INT SG EN (1/4)
PB/B (4/4)
PR/R (4/4)
DAC ENABLE (1/4)
INT. SG. (4/4)
EXT. INT. SG. EN (1/4)
Y/G (4/4)
VITC_DTSE (1/4)
SENSE (1/4)
CS (1/4)
RD/WR (1/4, 2/4)
D00-D07 (1/4, 2/4)
A0-A4 (1/4)
SAD DISP (1/4)
SAD BLK DISP (1/4)
CHAR_BLANK (4/4)
CHAR_R (4/4)
CHAR_G (4/4)
CHAR_B (4/4)
V SEL (1/4, 4/4)
H SEL (1/4)
V SYNC (1/4, 4/4)
CC C/T (1/4)
CC L1/L2 (1/4)
CC ON/OFF (1/4)
CHAR_BLANK
CHAR_R
CHAR_G
CHAR_B
CC RESET (1/4)
AFC P (1/4, 4/4)
525/625 (1/4)
SEL SYNC (1/4)
SELECT SYNC SEP (1/4)
H SYNC (1/4, 4/4)
SDI CC (1/4)
IC124 Z8622812PSC CLOSED CAPTION
IC106 TC74VHC163F (EL) 4BIT COUNTER
IC104 TC74VHC4040F (EL) LINE COUNTER
IC107 HN27C256AG-10 INT SIGNAL DATA
IC108 HN27C256AG-10 INT SIGNAL DATA
IC105 CXD2343S DOT CLK COUNTER
IC109 CXD1171M-T6 D/A CONVERTER
IC110 TC74HC166AF P/S CONVERTER
IC111 MC74HC4053F SWITCH
IC113 TC74VHC74F (EL) SAD BLANKING
IC120 CXD1030M-T6 SYNC GEN
IC123 TC74VHC74F (EL) D FLIP FLOP
IC114 TLC2932IPW-E20 PLL
IC115 (3/3) TC74VHC10F 3INPUT NAND
IC61 (1/2) TC74VHC123AF SDI CC PULSE GEN
IC61 (2/2) TC74VHC123AF SDI CC PULSE GEN
IC62 TC7S86F EXCLUSIVE OR
IC63 (1/3) MC74HC4053F SWITCH
IC63 (2/3) MC74HC4053F SWITCH
IC63 (3/3) MC74HC4053F SWITCH
IC116 (1/3) MC74HC4053F SWITCH
IC116 (2/3) MC74HC4053F SWITCH
IC116 (3/3) MC74HC4053F SWITCH
IC117 (4/4) TC74VHC00F (EL) NAND
IC117 (1/4) TC74VHC00F (EL) NAND
IC117 (2/4) TC74VHC00F (EL) NAND
IC117 (3/4) TC74VHC00F (EL) NAND
IC125 (5/6) SN74HC05ANS INVERTER
IC125 (6/6) SN74HC05ANS INVERTER
IC125 (1/6) SN74HC05ANS INVERTER
IC125 (2/6) SN74HC05ANS INVERTER
IC125 (3/6) SN74HC05ANS INVERTER
IC122 (5/6) TC74VHC04F (EL) INVERTER
IC121 (6/6) TC74VHCU04F (EL) INVERTER
IC122 (6/6) TC74VHC04F (EL) INVERTER
IC121 (5/6) TC74VHCU04F (EL) INVERTER
IC122 (2/6) TC74VHC04F (EL) INVERTER
IC122 (3/6) TC74VHC04F (EL) INVERTER
IC122 (4/6) TC74VHC04F (EL) INVERTER
IC122 (1/6) TC74VHC04F (EL) INVERTER
IC121 (4/6) TC74VHCU04F (EL) INVERTER
IC117 (4/4) TC74VHC00F (EL) NAND
IC119 (1/3) MC74HC4053F SWITCH
IC119 (2/3) MC74HC4053F SWITCH
IC119 (3/3) MC74HC4053F SWITCH
Q104 DTA144EK-T146 V SYNC SEL
Q103 DTA144EK-T146 V SYNC SEL
Q116 DTC144EK-T146 525/625 SWITCH
Q106 2SA1037K-TR BUFFER
Q107 2SC2412K-TR BUFFER
Q108 2SC2412K-TR BUFFER
Q109 2SA1037K-TR BUFFER
Q110 DTA144EK-T146 INT SIGNAL SW
Q111 2SC2412K-TR Y BUFFER
Q112 2SC2412K-TR PR BUFFER
Q113 2SC2412K-TR PB BUFFER
Q114 DTA144EK-T146 EXT. INT SIG SW
Q115 2SC2412K-TR Y BUFFER
Q152 2SC2412K Y BUFFER
Q151 2SC2412K Y BUFFER
Q51 2SC2412K-TR BUFFER
Q52 2SC2412K-TR BUFFER
D114 RD6.2SB PROTECTOR
D103 MA111-TX Y SWITCH
D104 MA111-TX Y OUT
D105 MA111-TX PB/PR SWITCH
D106 MA111-TX PR OUT
D107 MA111-TX PB OUT
D108 MA111-TX SWITCH
D109 MA111-TX Y OUT
D111 MA111-TX SAD RED
D112 MA111-TX SAD GREEN
D113 MA111-TX SAD BLUE
D13 MA111-TX SAD BLANKING
LPF101
CN7 40P B TO B
X102 14.1875MHz
X103 14.5MHz
X101 14.31818MHz
+5V
D+5V
5V
-5V

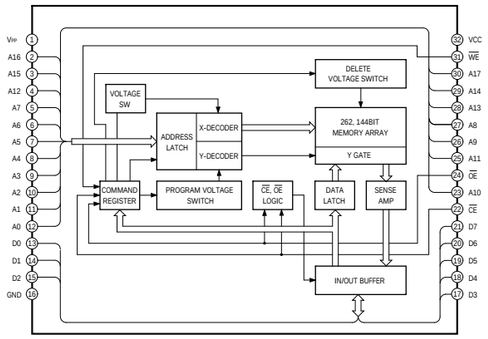

CN1 64P B TO B
CN2 64P B TO B
TO TB BOARD CN1
TO TB BOARD CN5
+12V
+15V
-15V
+6V
-6V
-5V
+5V
D+5V
5V
ANALOG +5V
IC37 PQ12TZ5U +12V REGULATOR
IC51 NJM79L05A -5V REGULATOR
IC52 LM2940CT-5.0 +5V REGULATOR
IC401 (2/2) LM393PS-E2 CURRENT LIMITER
IC401 (1/2) LM393PS-E2 CURRENT LIMITER
D401 MA111 CURRENT LIMITER
D402 MA111 CURRENT LIMITER
RY401
Q401 2SC2412K CURRENT LIMITER
Q402 2SC2412K CURRENT LIMITER
Q403 2SD1834-T101 CURRENT LIMITER
Q401 2SC2412K CURRENT LIMITER
IC14 LTC490CS8-E2 RS422 INTERFACE
IC16 (1/2) TC74VHC123AF (EL) SAMPLE PULSE GEN
IC16 (2/2) TC74VHC123AF (EL) SAMPLE PULSE GEN
IC11 (1/2) TL082CPS SAMPLE PULSE AMP
IC11 (2/2) TL082CPS SAMPLE PULSE AMP
IC35 TC74VHC541F (EL) OCTAL BUFFER
IC34 MC74HC30FEL SLOT RECEIVER
IC17 (3/4) TC74HC03AF NAND
IC17 (4/4) TC74HC03AF NAND
IC17 (2/4) TC74HC03AF NAND
IC17 (1/4) TC74HC03AF NAND
IC8 (4/6) SN74HC05ANS-E05 INVERTER
IC8 (5/6) SN74HC05ANS-E05 INVERTER
IC8 (6/6) SN74HC05ANS-E05 INVERTER
IC8 (3/6) SN74HC05ANS INVERTER
IC32 (4/6) SN74HC05ANS SLOT DRIVER
IC32 (5/6) SN74HC05ANS SLOT DRIVER
IC32 (1/6) SN74HC05ANS SLOT DRIVER
IC32 (2/6) SN74HC05ANS SLOT DRIVER
IC32 (3/6) SN74HC05ANS SLOT DRIVER
IC33 (1/6) SN74HC05ANS SLOT DRIVER
IC33 (2/6) SN74HC05ANS SLOT DRIVER
IC33 (3/6) SN74HC05ANS SLOT DRIVER
IC32 (6/6) SN74HC05ANS SLOT DRIVER
IC33 (4/6) SN74HC05ANS SLOT DRIVER
IC33 (5/6) SN74HC05ANS SLOT DRIVER
IC33 (6/6) SN74HC05ANS SLOT DRIVER
FL1
FL2
FL3
FL5
FL6
FL200
FL201
FL202
FL203
FL204
FL205
FL210
FL211
FL212
FL213
FL214
FL220
FL221
FL222
FL223
D1 RD6.2SB PROTECTOR
D2 RD6.2SB PROTECTOR
D3 RD6.2SB PROTECTOR
D6 RD12SB PROTECTOR
D7 RD12SB PROTECTOR
D8 RD12SB PROTECTOR
D9 RD12SB PROTECTOR
D10 RD12SB PROTECTOR
D11 RD12SB PROTECTOR
D12 RD6.2SB PROTECTOR
D21 RD6.2SB PROTECTOR
D22 RD6.2SB PROTECTOR
D23 RD6.2SB PROTECTOR
D24 RD6.2SB PROTECTOR
D115 RD6.2SB PROTECTOR
D403 RD6.2SB PROTECTOR
Q9 2SD1834-T101 TALLY DRIVER
TALLY (1/4)
OVERLOAD (1/4)
STBY (1/4)
POWER (1/4)
OPTION_RTS (2/4)
OPTION_RXD (2/4)
OPTION_TXD (2/4)
RXD2 (1/4)
TXD2 (1/4)
CHARA-1 (1/4)
CHARA-2 (1/4)
CHARA-3 (1/4)
CHARA (1/4)
V BLANK2 (1/4)
V BLANK1 (1/4)
V SYNC (1/4, 3/4)
H SYNC (1/4, 3/4)
AFC P (1/4, 3/4)
RESET (1/4)
MISO (1/4)
MOSI (1/4)
SCLK (1/4)
SLOT (1/4)
INT. SG. (3/4)
Y/G (3/4)
PB/B (3/4)
PR/R (3/4)
CHAR_R (3/4)
CHAR_BLANK (3/4)
CHAR_B (3/4)
CHAR_G (3/4)
VCBLK
VB
VG
VR
GND
+B
-15V
+15V
-6V
+6V
VIDEO
P.Y. OUT
P.C. OUT
Y/G
PB/B
PR/R
SLOT_6
SLOT_7
SLOT_4
SLOT_5
SLOT_2
SLOT_3
SLOT_0
SLOT_1
CHAR_BLANK
CHAR_G
CHAR_B
CHAR_R
AFC PULSE
H SYNC
V SYNC
2H SYNC
2V SYNC
N.C.
V BLANK1
H BLANK
V BLANK2
RESET
SAMPLE PULSE
MISO
MOSI
SCLK
DIGITAL +5V
DIGITAL GND
INT. SG.
NC
TALLY
OVERLOAD
STANDBY
POWER
+5V
H SYNC
V SYNC
RTS (OPTION)
N.C.
RXD (OPTION)
TXD (POTION)
BC (4/4)
SLOT RECIVER
SAMPLE PULSE GEN
CURRENT LIMITER
RS422 INTERFACE
CHARACTOR OUT

BC Board Waveforms

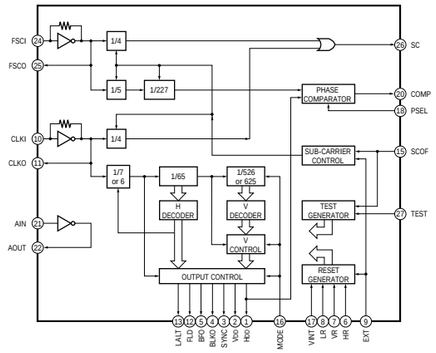
① 6.5Vp-p (20MHz)	② 6.4Vp-p (4.9152MHz)	③ 7.3Vp-p (14.1875MHz)
④ 11.6Vp-p (14.32MHz)	⑤ 7.5Vp-p (14.53MHz)	⑥ 5.1Vp-p (H)
⑦ 5Vp-p (H)	⑧ 5Vp-p (V)	⑨ 5Vp-p (V)
⑩ 7.4Vp-p (10MHz)		

BC Board IC Block Diagrams

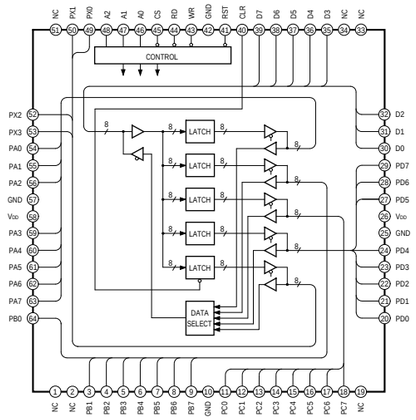
CAT28F020P-15 (IC3)



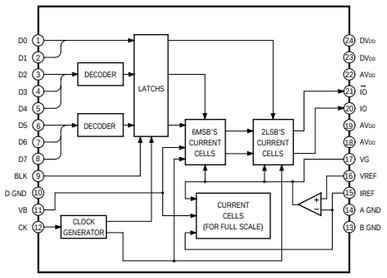
CXD1030M (IC120)



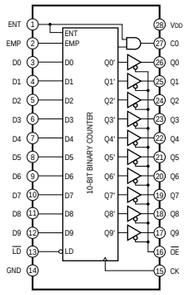
CXD1095BQ (IC5, 6)



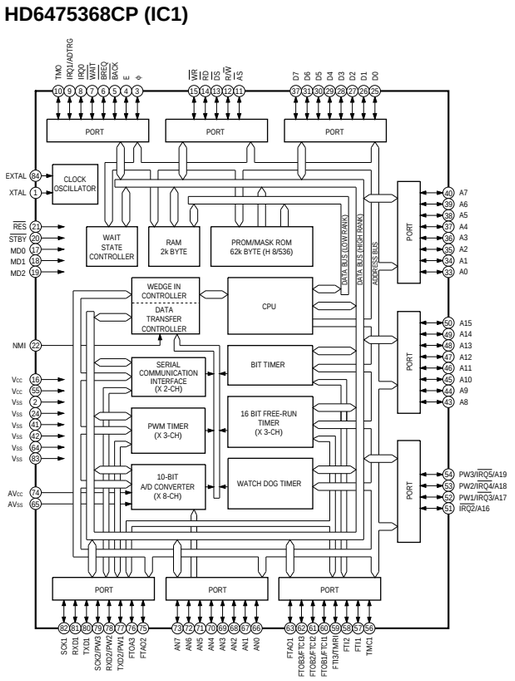
CXD1171M (IC109)



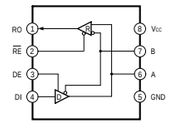
CXD2343S (IC105)



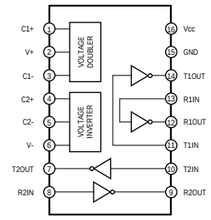
HD6475368CP (IC1)



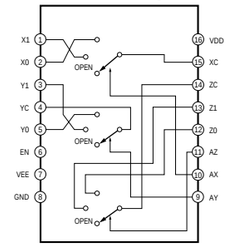
LTC485CS8 (IC25, 26)



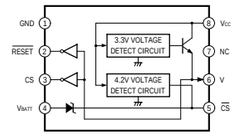
MAX202CSE (IC27, 28, 36)



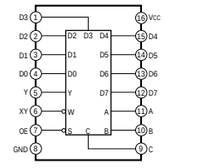
MC74HC4053F (IC63, 111, 116, 119)



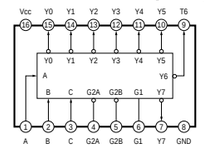
MM1026BFB (IC2)



TC74HC151AF (IC19-21)

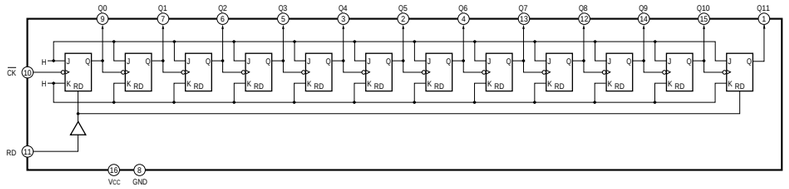


TC74VHC138F (IC10, 13)

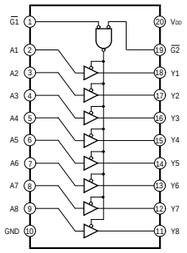


11-35

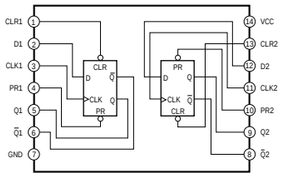
TC74VHC4040F (IC30, 104)



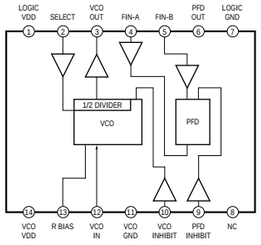
TC74VHC541F (IC29)



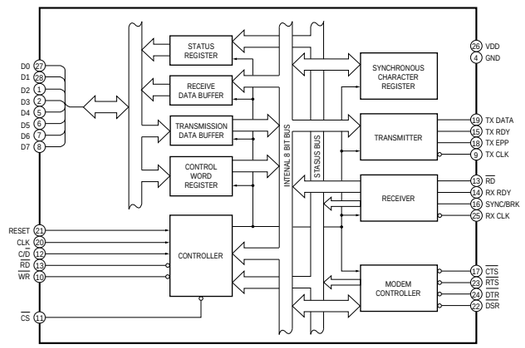
TC74VHC74F (IC113, 123)



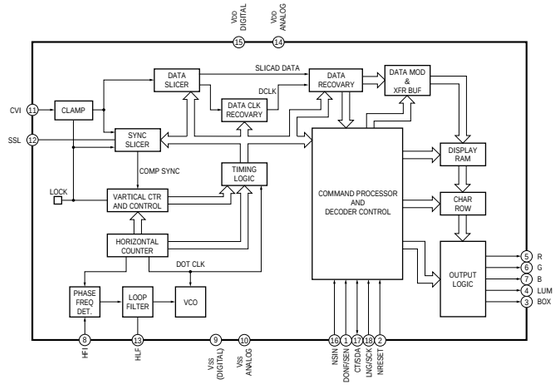
TLC2932IPW (IC114)



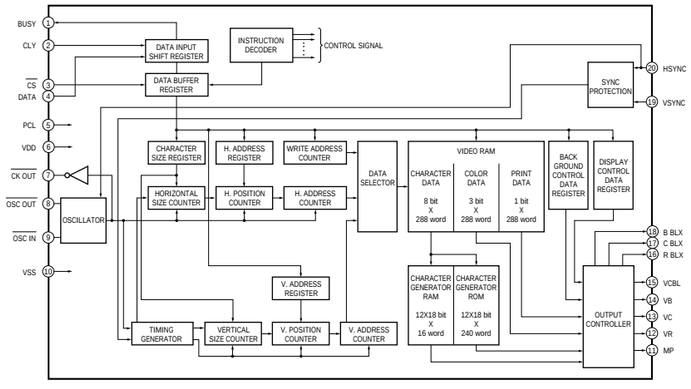
μPD71051GU-10E2 (IC22-24)

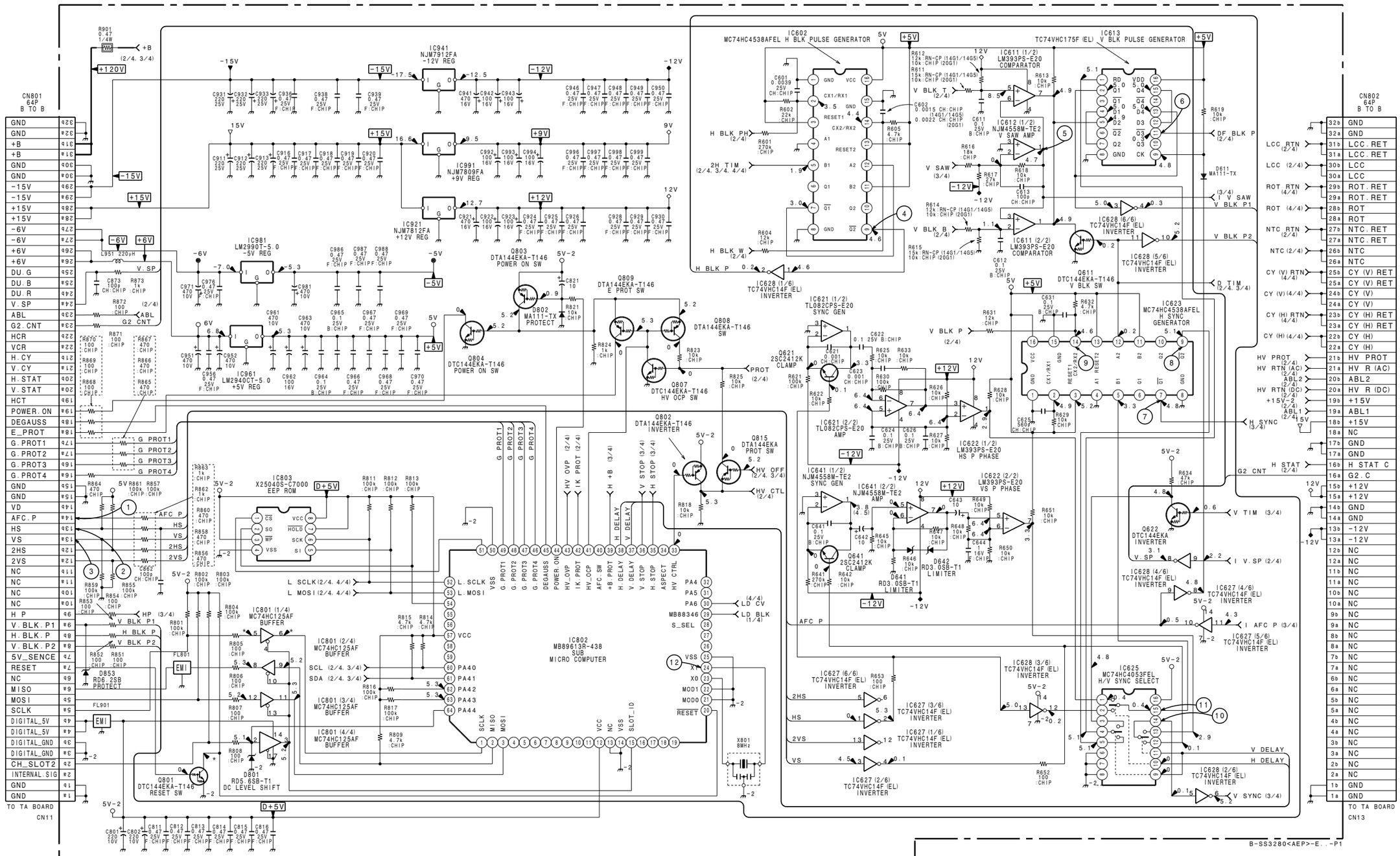


Z8622812PSC (IC124)



μPD6453GT-101-E1 (IC7)



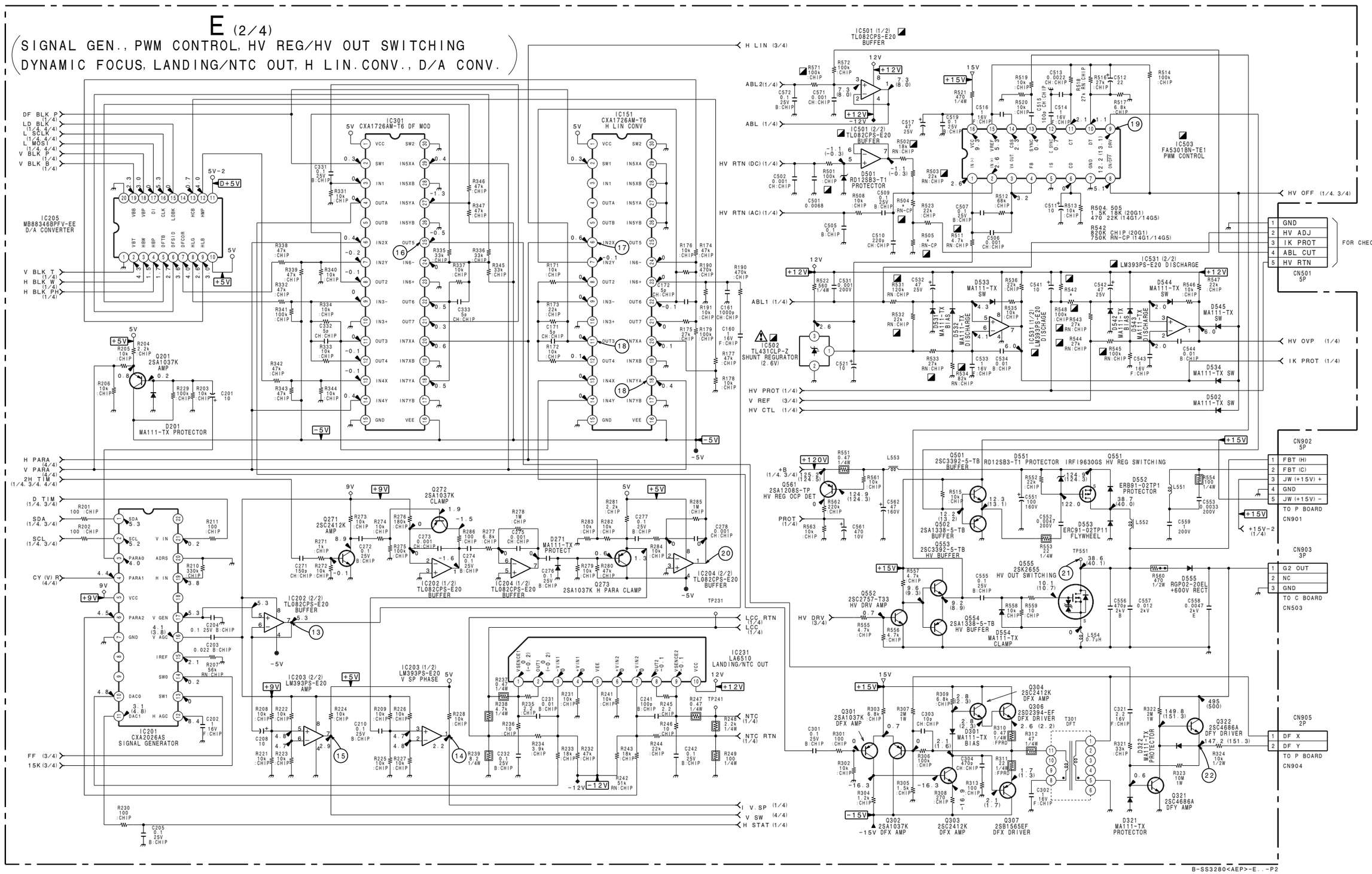


E (1/4)

(SYSTEM CONTROL, EEP ROM, H BLK/V BLK P GEN, H/V SYNC GEN)

E (2/4)

SIGNAL GEN., PWM CONTROL, HV REG/HV OUT SWITCHING
DYNAMIC FOCUS, LANDING/NTC OUT, H LIN.CONV., D/A CONV.

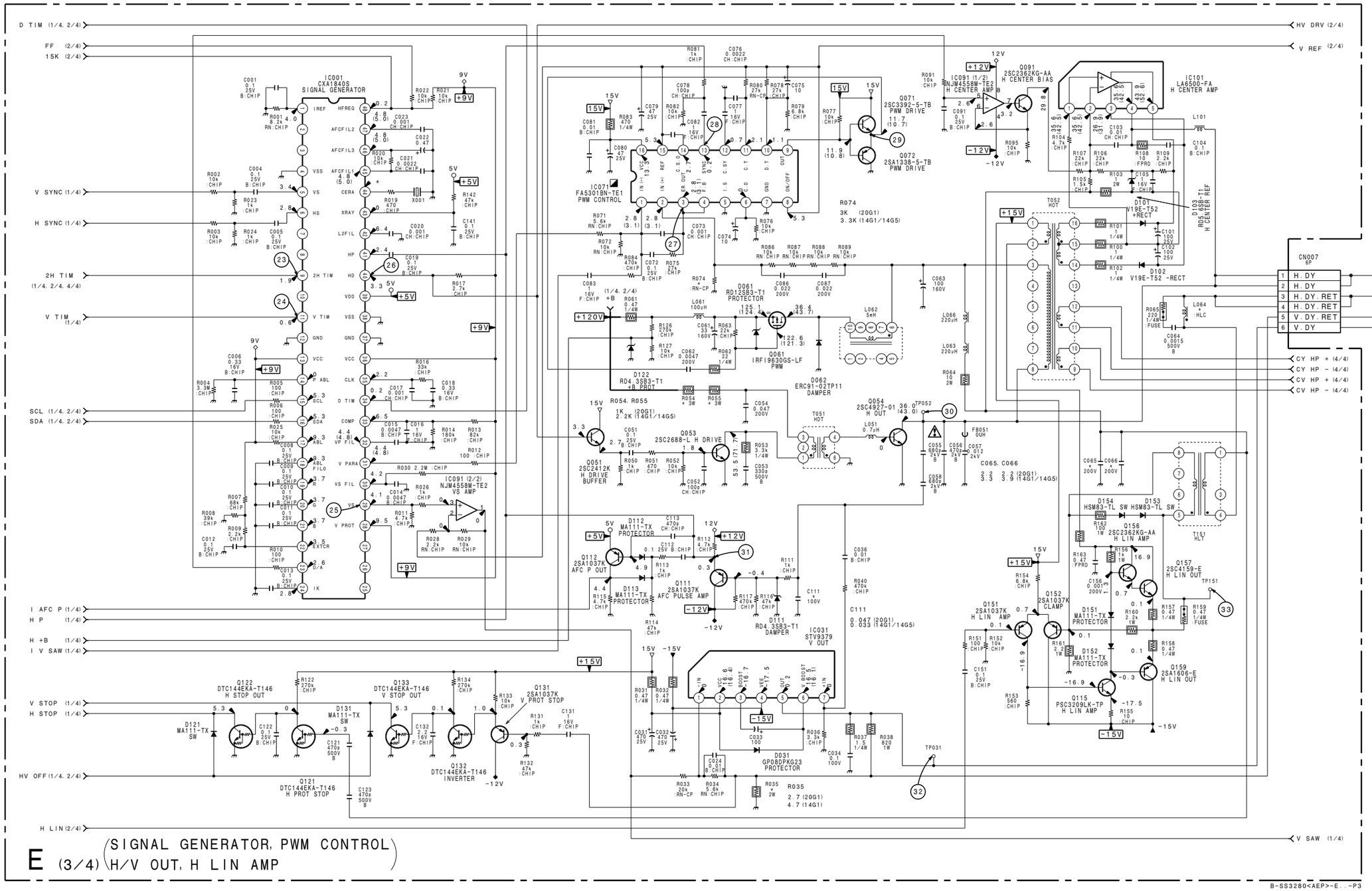


B-SS3280<AEP>-E..-P2

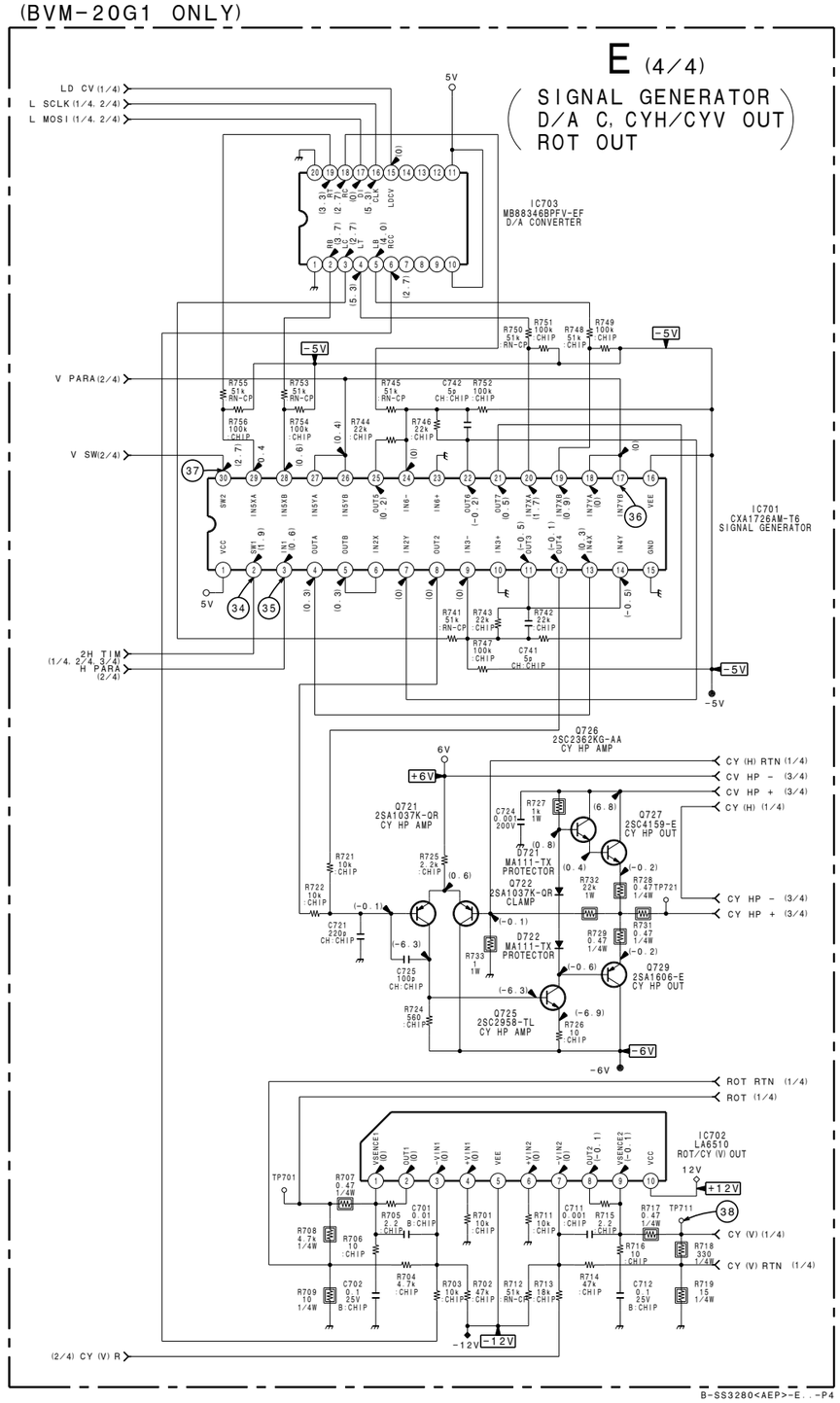
The components identified marked ⚠ are critical for safety.
Replace only with the part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

A B C D E F G H


IC001
CXA1840S
SIGNAL GENERATOR
IC091 (2/2)
NJM4558M-TE2
VS AMP
IC071
FA5301BN-TE1
PWM CONTROL
Q071
2SC3392-5-TB
PWM DRIVE
Q072
2SA1338-5-TB
PWM DRIVE
Q091
2SC2362KG-AA
H CENTER BIAS
IC101
LA6500-FA
H CENTER AMP
Q061
IRFI9630GS-LF
PWM
D061
RD12SB3-T1
PROTECTOR
D062
ERC91-02TP11
DAMPER
Q054
2SC4927-01
H OUT
Q053
2SC2688-L
H DRIVE
Q051
2SC2412K
H DRIVE
BUFFER
D122
RD4.3SB3-T1
+B PROT
D112
MA111-TX
PROTECTOR
Q112
2SA1037K
AFC P OUT
D113
MA111-TX
PROTECTOR
Q111
2SA1037K
AFC PULSE AMP
D111
RD4.3SB3-T1
DAMPER
IC031
STV9379
V OUT
Q151
2SA1037K
H LIN AMP
Q152
2SA1037K
CLAMP
D151
MA111-TX
PROTECTOR
Q115
PSC3209LK-TP
H LIN AMP
D152
MA111-TX
PROTECTOR
Q156
2SC2362KG-AA
H LIN AMP
Q157
2SC4159-E
H LIN OUT
Q159
2SA1606-E
H LIN OUT
D101
V19E-T52
+RECT
D102
V19E-T52 -RECT
D103
RD5.6ES2-T1
H CENTER REF
D154
HSM83-TL SW
D153
HSM83-TL SW
T051
HOT
T151
HLT
CN007
6P
DY
H. DY
H. DY
H. DY. RET
H. DY. RET
V. DY. RET
V. DY
D. TIM (1/4, 2/4)
FF (2/4)
15K (2/4)
V SYNC (1/4)
H SYNC (1/4)
2H TIM
(1/4, 2/4, 4/4)
V TIM (1/4)
SCL (1/4, 2/4)
SDA (1/4, 2/4)
I AFC P (1/4)
H P (1/4)
H +B (1/4)
I V SAW (1/4)
V STOP (1/4)
H STOP (1/4)
HV OFF (1/4, 2/4)
H LIN (2/4)
HV DRV (2/4)
V REF (2/4)
CY HP + (4/4)
CY HP - (4/4)
CV HP + (4/4)
CV HP - (4/4)
V SAW (1/4)
+B (1/4, 2/4)
E (3/4) (SIGNAL GENERATOR, PWM CONTROL H/V OUT, H LIN AMP)
B-SS3280<AEP>-E. .-P3

(BVM-20G1 ONLY)



B-SS3280<AEP>-E..-P4

E Board Waveforms (1/2)

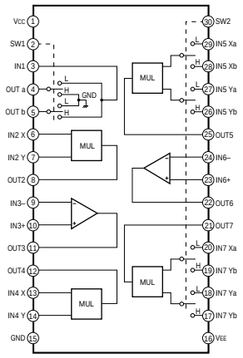
① 5.2Vp-p (H)	② 4.4Vp-p (H)	③ 4.3Vp-p (V)
④ 5.1Vp-p (H)	⑤ 7.2Vp-p (V)	⑥ 5Vp-p (V)
⑦ 5Vp-p (H)	⑧ 5Vp-p (V)	⑨ 2.5Vp-p (V)
⑩ 5Vp-p (V)	⑪ 5Vp-p (H)	⑫ 5.9Vp-p (8MHz)
⑬ 2Vp-p (V)	⑭ 5Vp-p (H)	⑮ 5Vp-p (V)
⑯ 1.3Vp-p (V)	⑰ 1.7Vp-p (H)	⑱ 1.1Vp-p (V)
⑲ 15.5Vp-p (H)	⑳ 1.1Vp-p (V)	㉑ 502Vp-p (H)
㉒ (14 INCH) 300Vp-p (V)	㉒ (20 INCH) 330Vp-p (V)	㉓ 3Vp-p (2H)
㉔ 3.7Vp-p (V)	㉕ 4Vp-p (V)	㉖ 4.8Vp-p (H)
㉗ 1.5Vp-p (V)	㉘ 1.7Vp-p (H)	㉙ 15.2Vp-p (H)

E Board Waveforms (2/2)

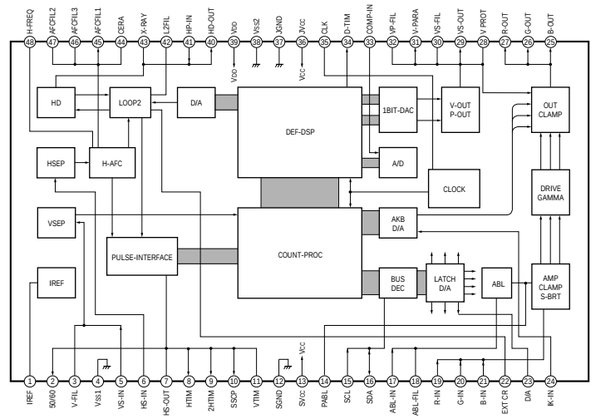
㉚ (14 INCH) 696Vp-p (H)	㉚ (20 INCH) 412Vp-p (H)	㉛ 4Vp-p (H)
㉜ (14 INCH) 56.5Vp-p (V)	㉜ (20 INCH) 57.5Vp-p (V)	㉝ (14 INCH) 83.2Vp-p (H)
㉝ (20 INCH) 121Vp-p (H)	㉞ 3.3Vp-p (H)	㉟ 2.1Vp-p (H)
㊱ 3.3Vp-p (H)	㊲ 5.1Vp-p (V)	㊳ 1.7Vp-p (V)

E Board IC Block Diagrams

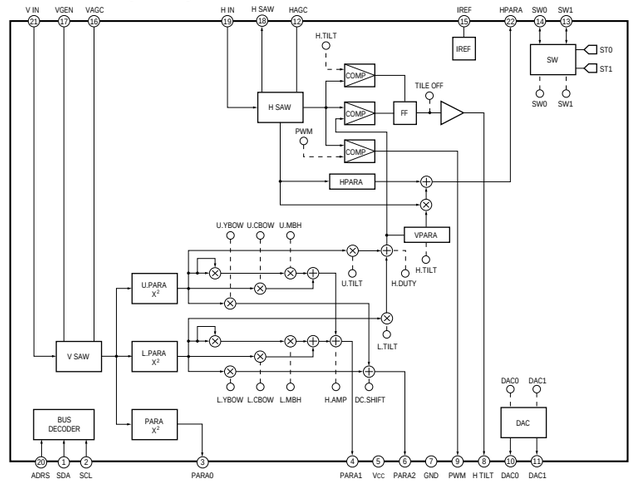
CXA1726AM (IC151, 301, 701)



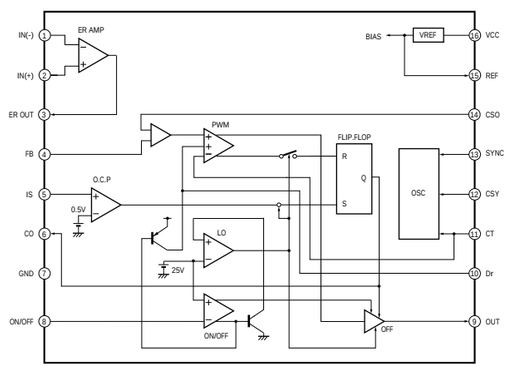
CXA1840S (IC001)



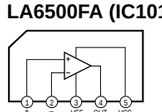
CXA2026AS (IC201)



FA5301BN-TE1 (IC071, 503)

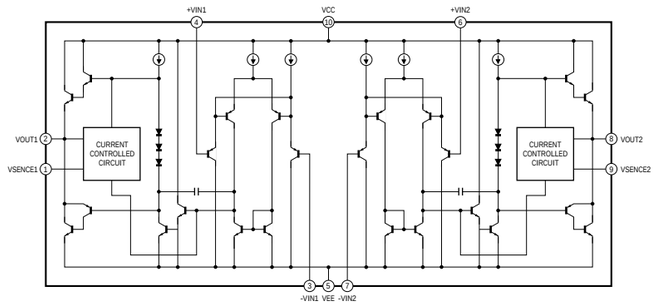


LA6500FA (IC101)

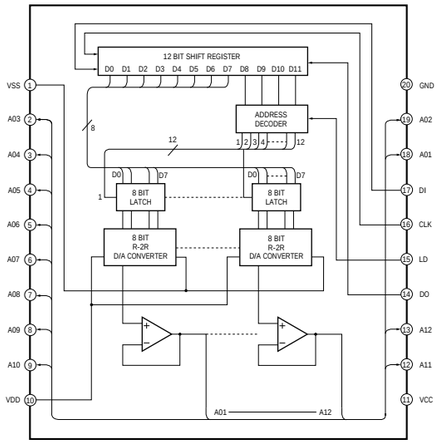


11-41

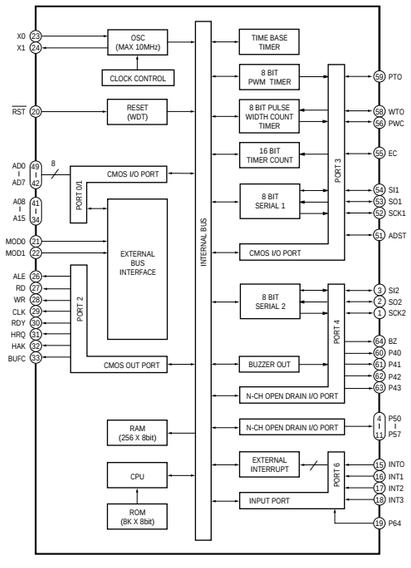
LA6510 (IC231, 702)



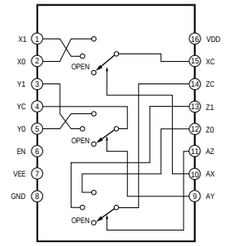
MB88346BPFV (IC205, 703)



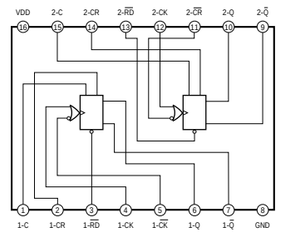
MB89613R-438 (IC802)



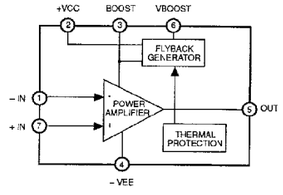
MC74HC4053F (IC625)



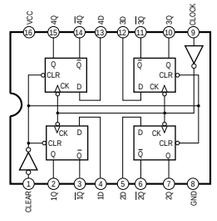
MC74HC4538AF (IC602, 623)



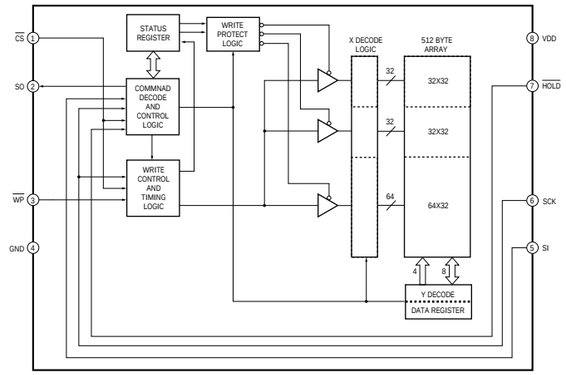
STV9379 (IC031)



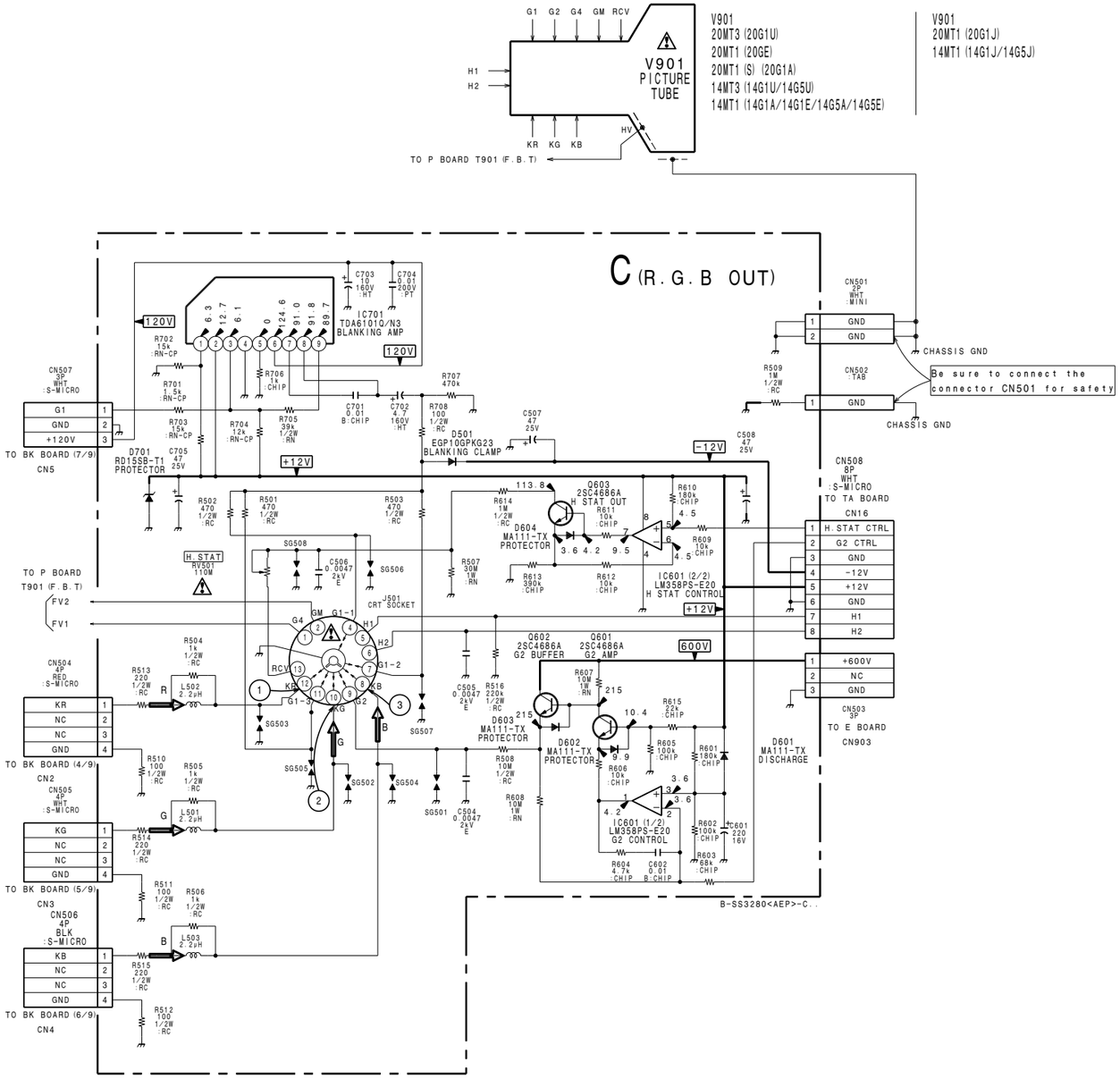
TC74VHC175F (IC613)



X25040SI (IC803)

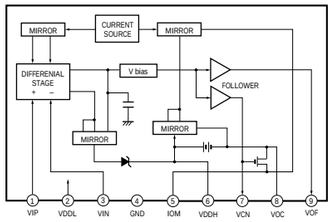


11-42

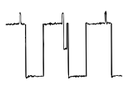


C Board IC Block Diagram

TDA6101Q/N3 (IC701)



C Board Waveforms

①	②	③
		
74Vp-p (H)	75.6Vp-p (H)	67.6Vp-p (H)

The components identified marked ⚠ are critical for safety.
Replace only with the part number specified.

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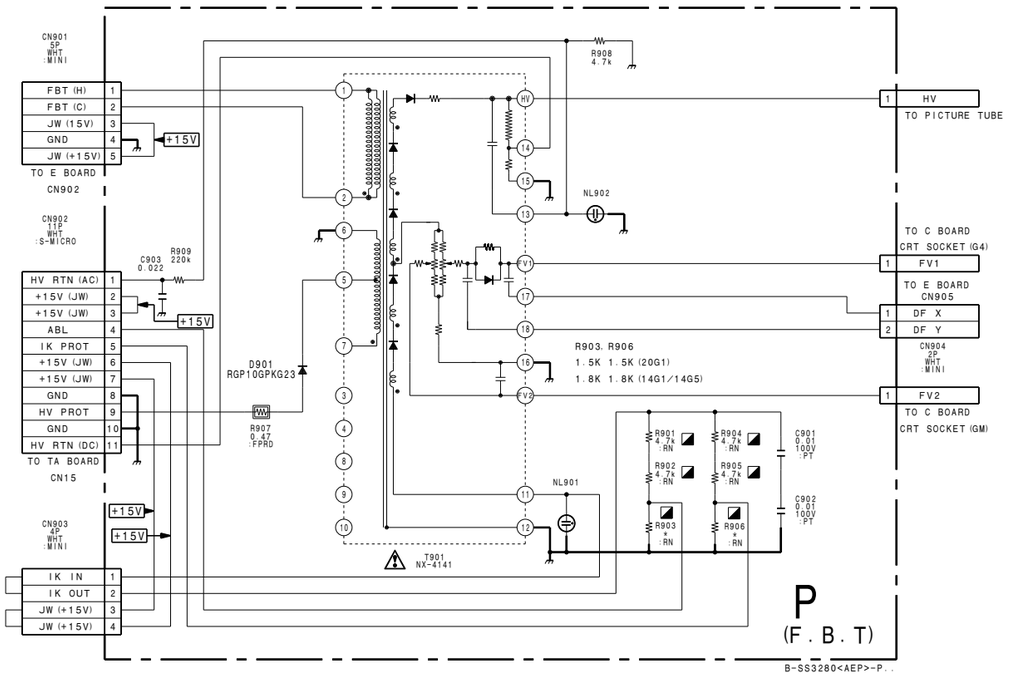
Ne les remplacer que par une piéce portant le numéro spécifié.

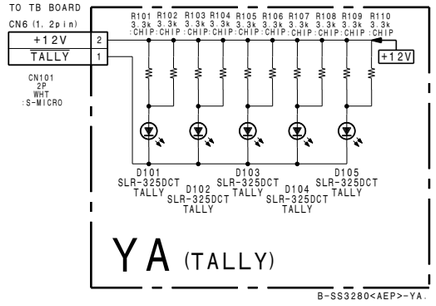
11-43

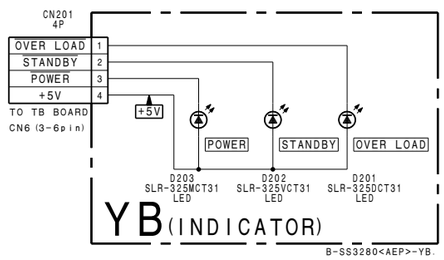


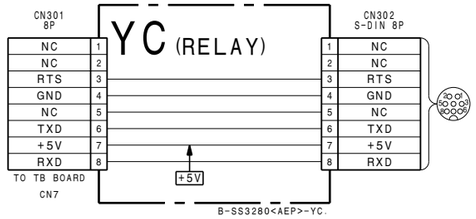
B-SS3280<AEP>-P..

The components identified marked ⚠ are critical for safety.
Replace only with the part number specified.

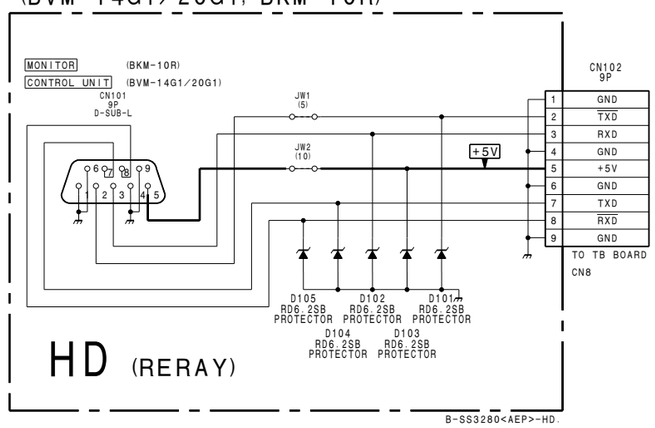
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

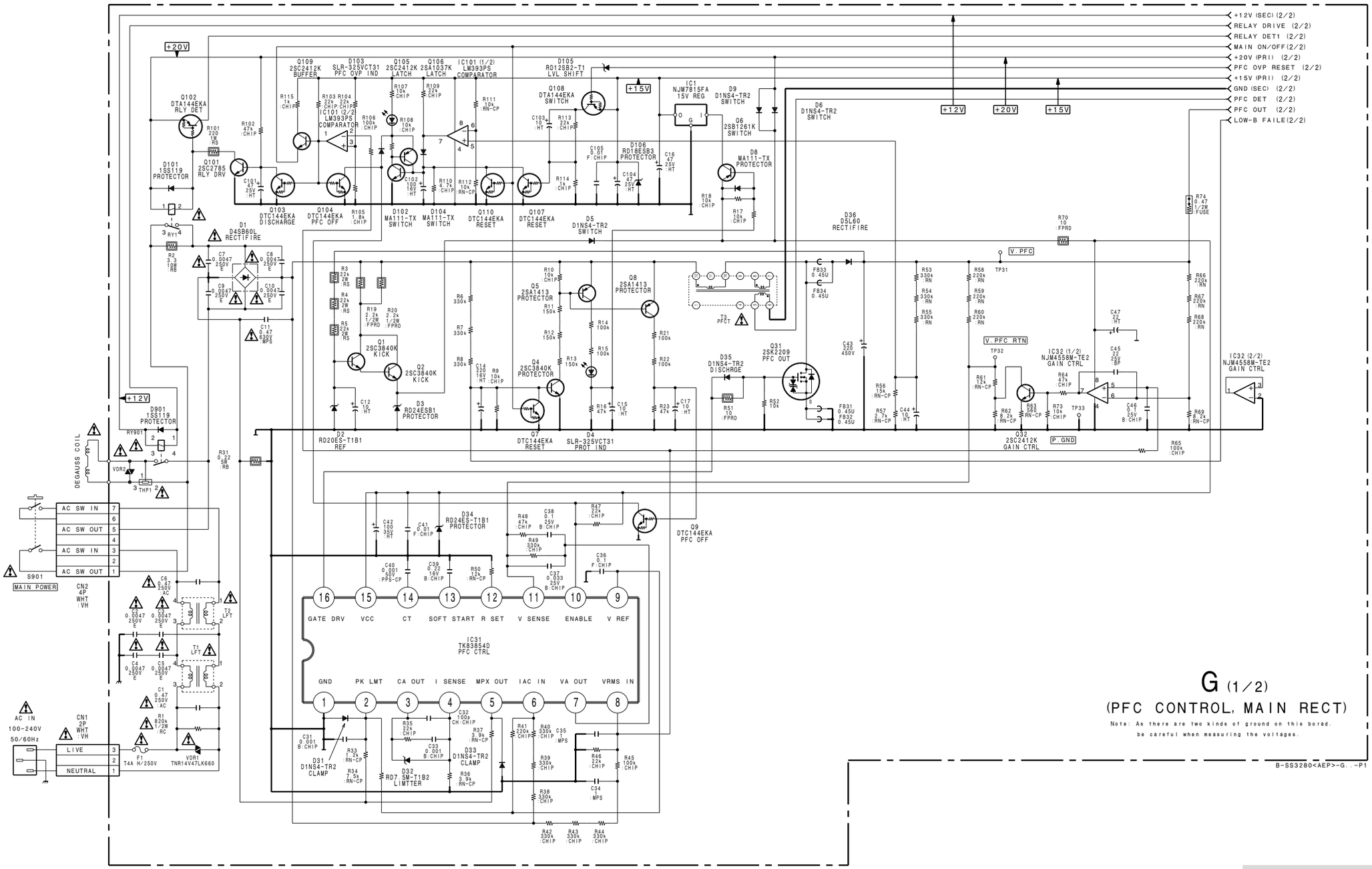






(BVM-14G1/20G1, BKM-10R)





G (1/2)

(PFC CONTROL, MAIN RECT)

Note: As there are two kinds of ground on this borad.
be careful when measuring the voltages.

B-SS3280<AEP>-G..-P1

The components identified marked ⚠ are critical for safety.
Replace only with the part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

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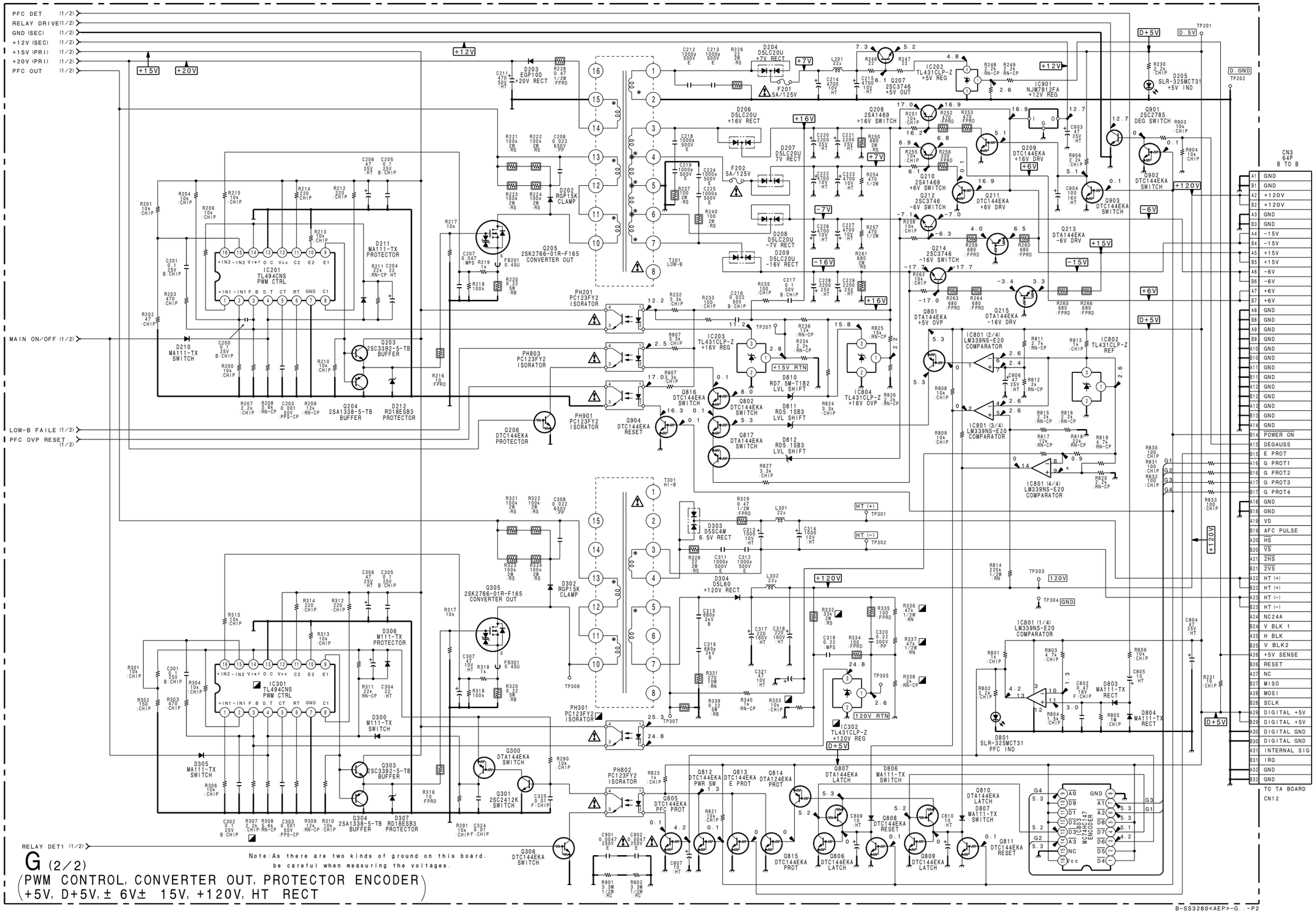
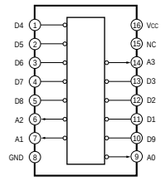
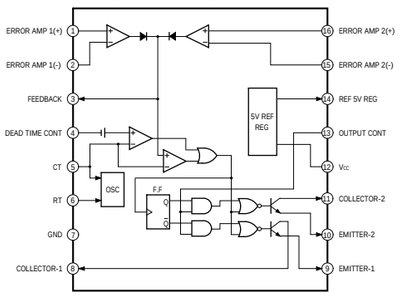


G Board IC Block Diagrams

MC74HC147FEL (IC803)

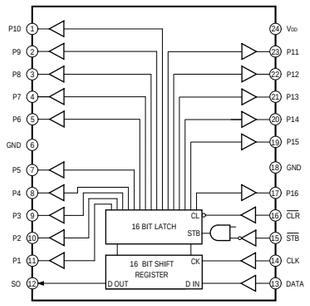


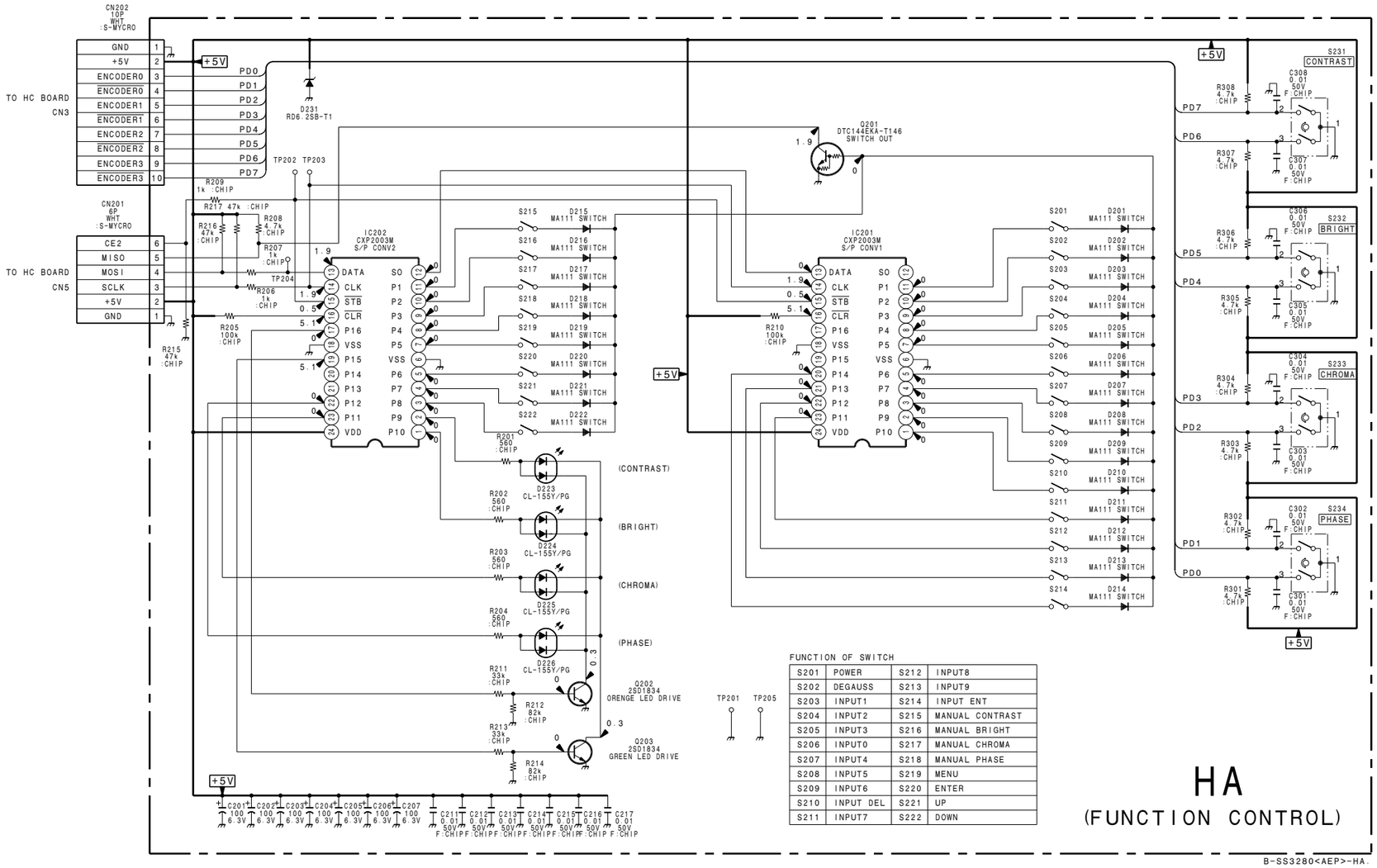
TL494CNS (IC201, 301)

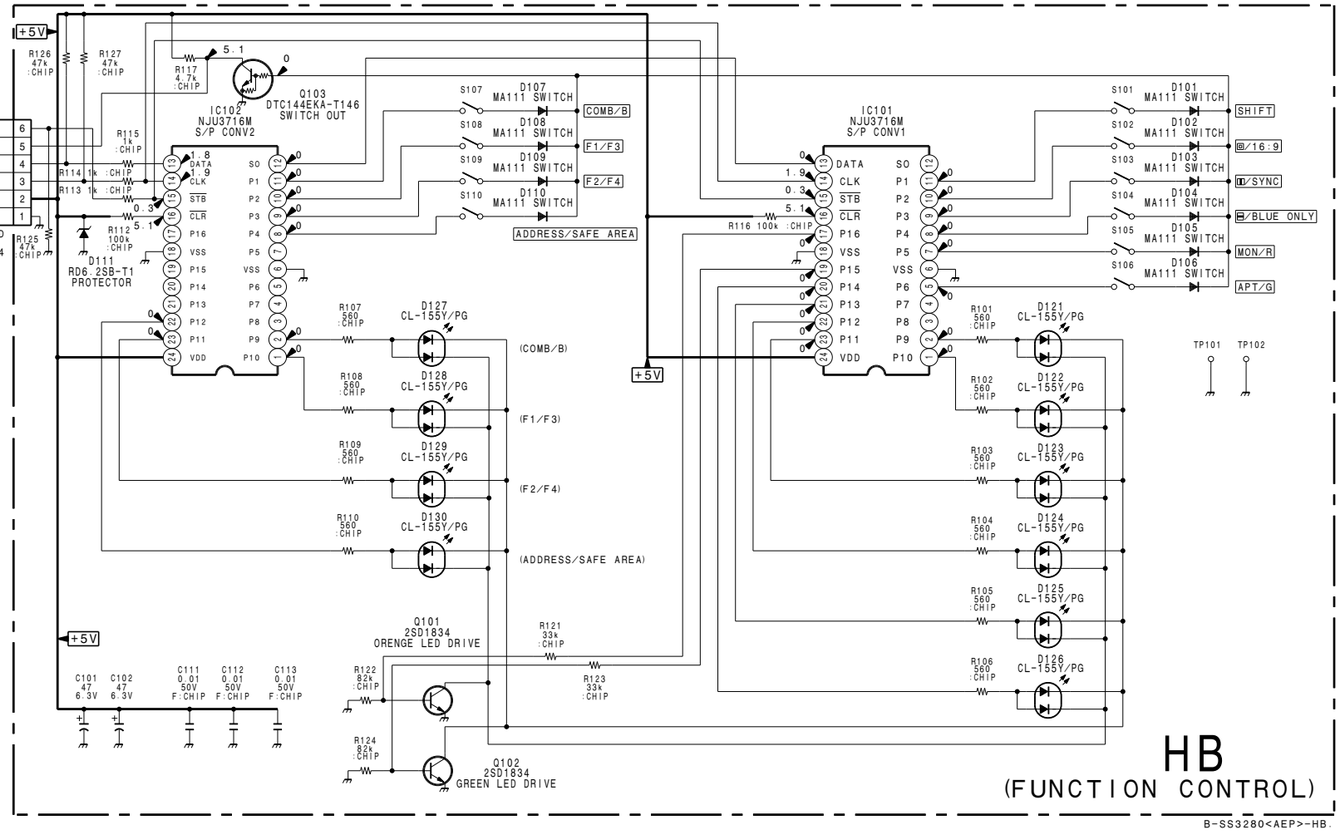


HA Board IC Block Diagram

CXP2003M (IC201, 202)

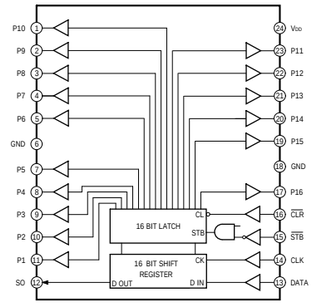




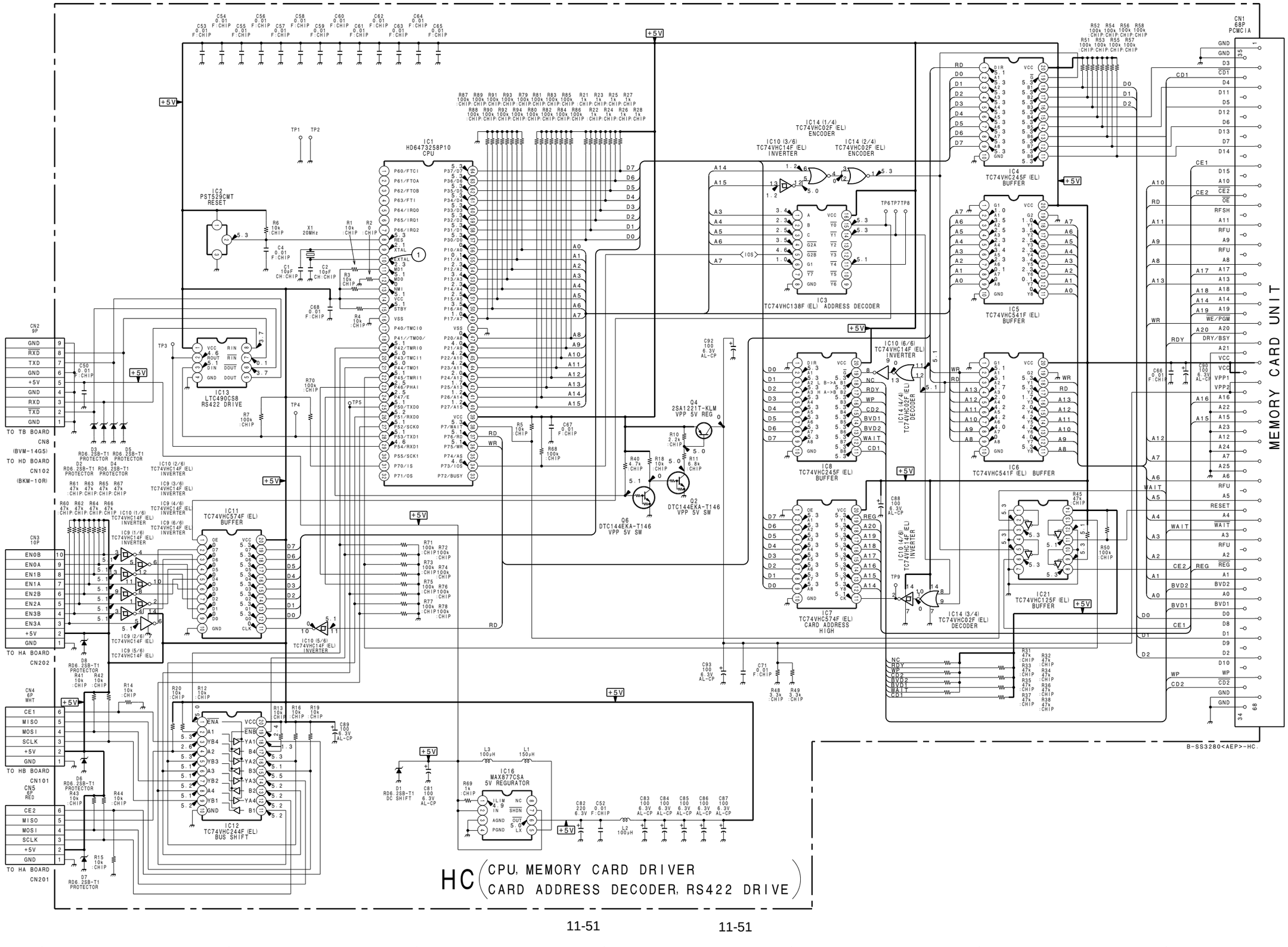


HB Board IC Block Diagram

CXP2003M (IC101, 102)

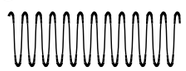


HC BVM-14G5, BKM-10R



HC Board Waveforms

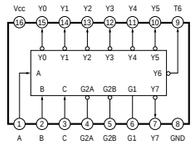
①



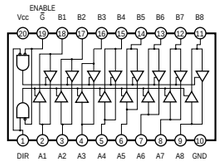
2.1Vp-p (20MHz)

HC Board IC Block Diagrams

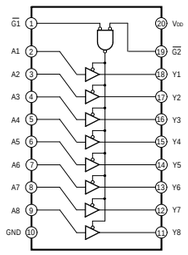
TC74VHC138F (IC3)



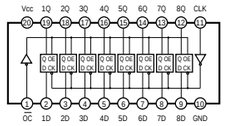
TC74VHC245F (IC4, 8)

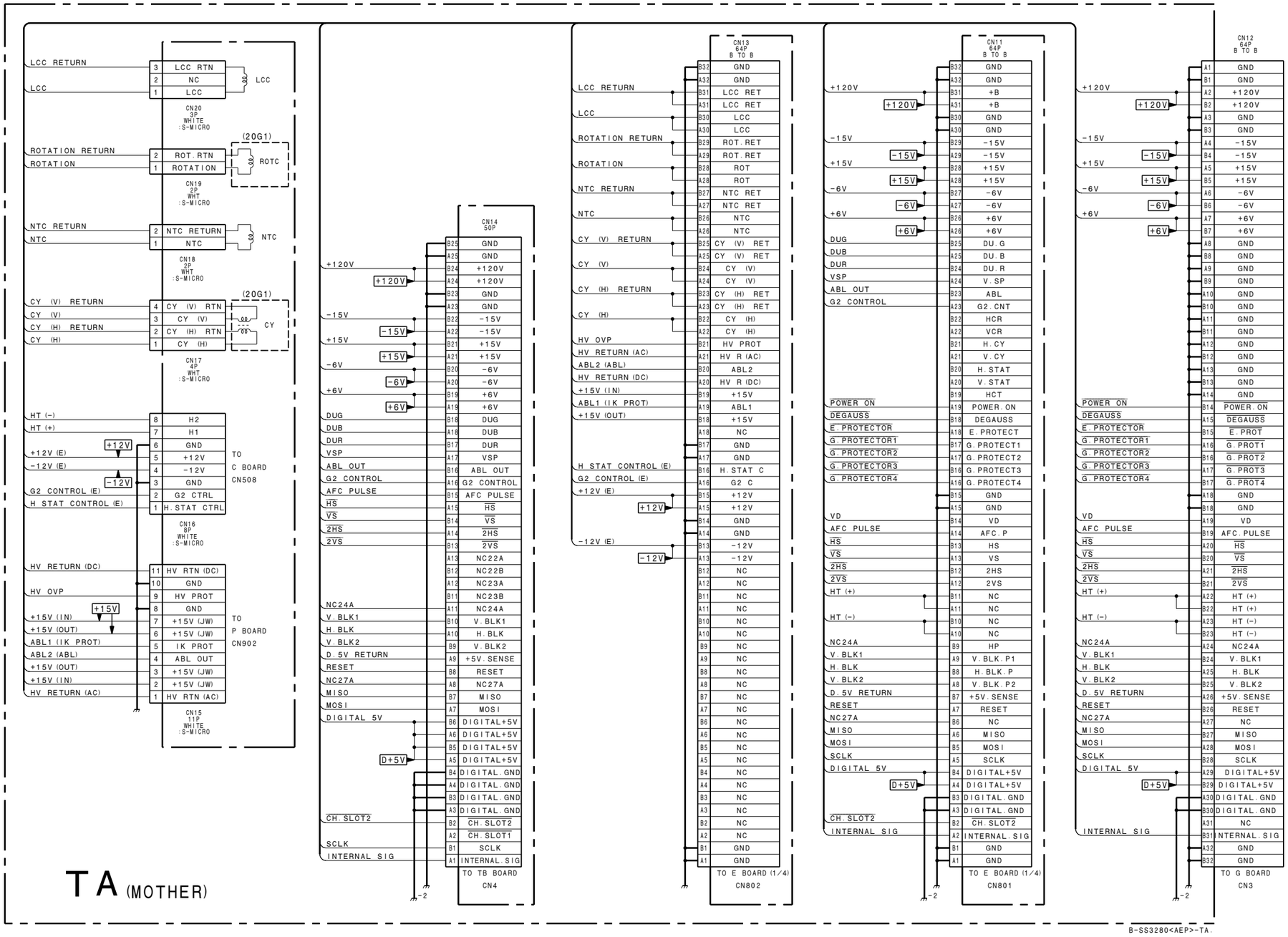


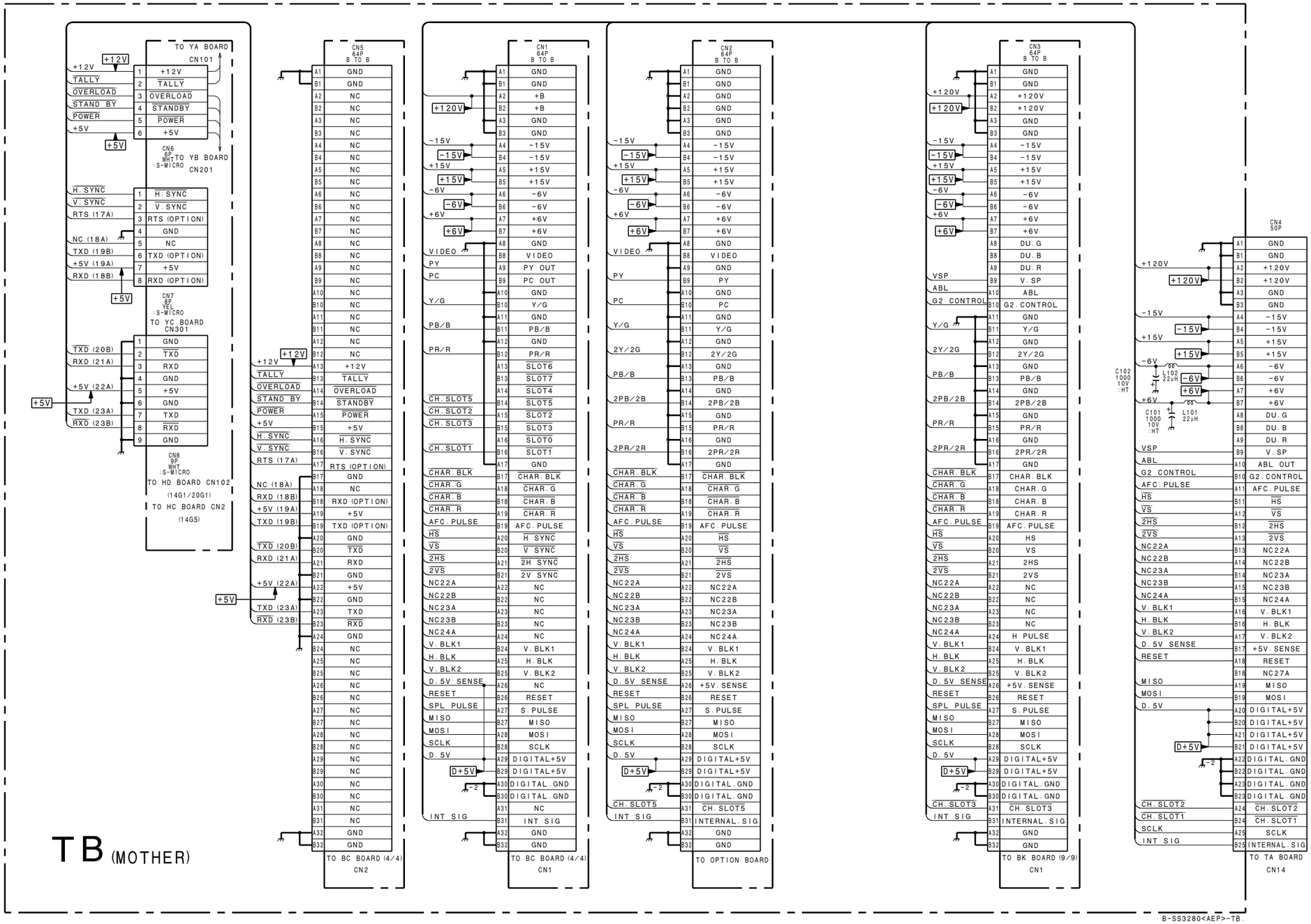
TC74VHC541F (IC5, 6)



TC74VHC574F (IC7, 10)




LCC RETURN
LCC
CN20 3P WHITE :S-MICRO
LCC
ROTATION RETURN
ROTATION
(20G1)
CN19 2P WHT :S-MICRO
ROTC
NTC RETURN
NTC
CN18 2P WHT :S-MICRO
NTC
CY (V) RETURN
CY (V)
CY (H) RETURN
CY (H)
(20G1)
CN17 4P WHT :S-MICRO
CY
HT (-)
HT (+)
+12V (E)
-12V (E)
G2 CONTROL (E)
H STAT CONTROL (E)
CN16 8P WHITE :S-MICRO
TO C BOARD CN508
HV RETURN (DC)
HV OVP
+15V (IN)
+15V (OUT)
ABL1 (IK PROT)
ABL2 (ABL)
+15V (OUT)
+15V (IN)
HV RETURN (AC)
CN15 11P WHITE :S-MICRO
TO P BOARD CN902
CN14 50P
CN13 64P B TO B
CN11 64P B TO B
CN12 64P B TO B
TO TB BOARD CN4
TO E BOARD (1/4) CN802
TO E BOARD (1/4) CN801
TO G BOARD CN3
TA (MOTHER)
B-SS3280<AEP>-TA.


TO YA BOARD
CN101
CN6
6P
WHT
:S-MICRO
TO YB BOARD
CN201
CN7
6P
YEL
:S-MICRO
TO YC BOARD
CN301
CN8
9P
WHT
:S-MICRO
TO HD BOARD CN102
(14G1/20G1)
TO HC BOARD CN2
(14G5)
CN5
64P
B TO B
TO BC BOARD (4/4)
CN2
CN1
64P
B TO B
TO BC BOARD (4/4)
CN1
CN2
64P
B TO B
TO OPTION BOARD
CN3
64P
B TO B
TO BK BOARD (9/9)
CN1
CN4
50P
TO TA BOARD
CN14
TB (MOTHER)
B-SS3280<AEP>-TB.

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